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CLINICAL LECTURES  
UPON  
INFLAMMATION  
AND OTHER  
DISEASES OF THE EAR.

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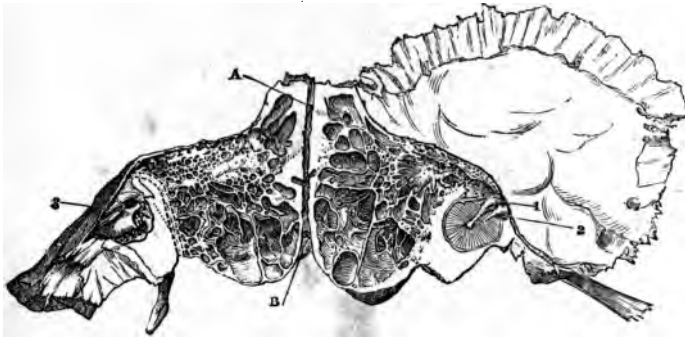
ROBT. T. COOPER. M. D.











#### ANTERO-POSTERIOR SECTION OF A LEFT TEMPORAL BONE

from behind forwards midway through the mastoid process, both portions being joined by hinges at A and B.

The mastoid cells are seen in both divisions. *Upon the right* (in the plate) *portion* is the membrana tympani, with the malleus (1), its handle passing down to the centre of the membrane, behind which (in front of it as it appears in the plate) lies the incus (2), while passing back from the head of the malleus is the horizontal portion of the mastoid cells going to expand and form the vertical portion of these cells.

On the left section we have the cavity of the middle ear, above and towards the left of which is seen the sinus (3), sawn through, into which fits the head of the malleus; below and to the left of the ~~sinus~~ the Eustachian tube comes off.

The course of the facial nerve arching over the middle ear is mapped off by the two bold double-dotted lines, that of the chorda tympani by the delicate single line.

~~CLINICAL LECTURES~~

~~UPPER~~

# INFLAMMATION

AND OTHER

## DISEASES OF THE EAR.

*Being a Course of Lectures delivered to the Students attending  
the Class of the London School of Homœopathy during  
the Winter Session of 1877-78.*

*Edited by Robert T. Cooper, A.B., M.D. Trin. Coll., Dublin,  
and published by the London Homœopathic Hospital.*

ROBERT T. COOPER, A.B., M.D. TRIN. COLL., DUBLIN,

PHYSICIAN, DISEASES OF THE EAR, LONDON HOMŒOPATHIC HOSPITAL.



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## P R E F A C E.

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I HARDLY think that the publication of this course of Lectures upon a department of medicine the literature of which is so scanty requires any apology whatever ; for that some such treatise was required is perfectly obvious to any one acquainted with our literature ; and whether this will meet the want that certainly exists it is for others and not for me to determine.

My object has been to make these lectures as practical and as interesting as possible, and to supply such information regarding aural disease as will render my remarks specially acceptable to the general practitioner.

As a compendium upon Ear Diseases these Lectures will be found deficient upon several points, notably upon such matters as the Artificial Tympanum, the Removal of Aural Polypi, and a few other things usually made prominent in treatises upon the subject ; the reason of this is that my attention has been entirely engrossed in laying down a firm foundation, and one upon which all skilled knowledge must necessarily rest.

In a word, I have gone upon the principle that the ear is an

organ the diseases of which are not of a character so essentially special as to require the observance of principles in any way differing from those that have successfully guided the clinician in investigating the ailments of other parts of the body ; I have, therefore, made it a main object to bring anatomy and physiology to bear upon the facts daily seen in the presence of disease, and by this means to obtain a clear insight into a class of affections that are as common as they are important, and as little generally understood as they are common.

We must mention that the first six of the Lectures appeared in the *Homœopathic World*, and these Mons. Dekeersmaecker, the eminent oculist of Brussels, is engaged in translating into French, an honour that I fully appreciate but can hardly suppose to be deserved.

ROBERT T. COOPER.

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# CLINICAL LECTURES

ON

## INFLAMMATION OF THE EAR.

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### I.

The Importance of the Middle Ear—Contrast between it and the External Ear—The terms *Outer* and *Inner*, *External* and *Internal* Ear—The Mastoid Cells, and how affected by Inflammation—The Circumscribing Influence of the *Membrana Tympani*—Symptoms of Inflammation of the Mastoid Cells—The Necessity and Indications for Operative Interference—The Place to Operate—Why Inflammation proves destructive—The Importance of keeping in mind the parts engaged—Prognosis of Mastoid Cell Involvement.

ACUTE OTITIS: its Symptoms and Mode of Causation—The Indications for *Aconite*—The Necessity for and supposed disadvantages of Poultrices—The Indications for *Mercurius* and for *Belladonna*.

I PURPOSE in these lectures to pay chief attention to the consideration of the affections of the ear—the middle ear, that is—that take on an inflammatory form.

To understand the diseases that affect any organ in the body, we cannot do better than begin by studying the way in which acute inflammation affects it; and if this be true of other organs, it is particularly so of the diseases of the ear, most of the chronic varieties of which are merely the sequelæ of acute inflammatory action; this, I should think, is obvious, and it is equally obvious that you must be acquainted with the anatomy of the parts under consideration before we can hope to render our descriptions intelligible.

The term otitis, or inflammation of the ear, is almost invariably predicated of, in aural literature, the middle ear; when mention is made of inflammation of the ear, our thoughts revert at once to the *middle ear*. The reason of this is that acute inflammation is so usually found to involve the middle ear, and when there is characterised by such extreme suffering, that it alone is thought of when we speak of otitis: we either find that the middle ear is primarily attacked, or the inflammatory action settling at first upon some distant part, such as the nose or the throat, from this spreads along the channel of the Eustachian tube, to fix itself in the cavity of the tympanum; and thus the middle ear becomes the situs of the inflammatory action.

But the middle ear must by no means be supposed to monopolise inflammatory action exclusively—not at all. No one conversant with aural disease, although the middle ear so completely occupies their minds when otitis is spoken of, thinks this for a moment. For it is by no means infrequent to see erysipelas of the scalp spreading along until it involves the external ear; and again, I have known at the climacteric epoch of woman's life the facial flushings to be accompanied by a true otitis of the external ear; and again, as a sequence of frost-bites, the external ear may inflame; but, take it as a rule, inflammation of the external ear is either trivial or transitory—that is to say, the inflammation is seldom severe, or if severe, the tendency of the inflammation is not to remain long located in the external ear alone, but to spread from it along the meatus externus to the drum-cavity or middle ear. Once in the middle ear, the tendency is, however it may extend itself, to remain there. This little cavity of the middle ear seems determined to inflame upon the slightest excuse, and when it inflames the pain becomes excessive; in all this contrasting with the auricle, or external ear.

And now you must allow me, before we proceed any further, to consider what constitutes this wonderfully interesting, and therapeutically important, middle ear. Do not let me offend you, I am sure you know as well as I do what the anatomical parts are that enter into the construction of the middle ear. But though this may be quite true, in looking through communications in the medical journals we will every now and then come across evidence of most glaring confusion regarding the parts that go to form this *cavitas tympani*. Thus, very often the *internal* ear is named when in reality the writer wishes to imply the *middle* ear; and then, again, the *tympanum*, to the minds of some, evidently conveys the idea of the drumhead, and to others that of the tympanal cavity only. This inaccuracy of description in some writers upon aural subjects has been to others a source of severe and not altogether unmerited censure. Long ago Wilde referred to it, and in Peter Allen's second and last edition of his work upon "Aural Catarrh" he professes to have set the Germans—for in Germany the same errors occur—right upon this matter. This is rather pretentious of Mr. Allen, but we will let him pass, and will proceed to consider what the middle ear really is.

The middle ear is in reality nothing more than an expansion of the Eustachian tube shut out from the external ear, but extending above and behind it in the shape of the mastoid cells. In description, the middle ear, the *cavitas tympani*, and the *tympanum* are very generally used as synonymous terms, but in reality the middle ear includes the *membrana tympani*, and therefore is not, strictly speaking, synonymous with the *cavitas tympani*, as writers like the critical Mr. Allen would have us suppose. We get a very good idea, though not a strictly accurate one, of the parts that enter into the construction of the middle ear by picturing to



ourselves an ordinary clay pipe with a parchment membrane stretching across the bowl and laid upon its side. You will, by comparing this to the middle ear, have a rough idea of its constituent parts, the parchment being the drumhead, the hollow of the bowl, though relatively much larger, the *cavitas tympani*, and the shank the Eustachian tube, the entire pipe representing the entire middle ear with the exception of the mastoid cells. The internal ear will then be easily understood to mean the cochlea and vestibule with its semicircular canals, neither of which is in the living subject in open communication with the middle ear, but both are shut out from it by intervening membrane. Membrane therefore closes the middle ear from the external ear and from the internal ear; there is no direct communication between these parts—each is a part to itself, and should in description be so regarded.

But while the middle ear does not communicate directly with either the external or the internal ear, it has obviously a direct communication with the pharynx by means of the Eustachian tube, and with the cell-like structure of the mastoid process of the temporal bone by means of one large and several small openings called *the mastoid openings*. Now bear in mind, for it is often a source of confusion, that while in anatomical treatises the Eustachian tube is generally regarded as a component part of the middle ear, the mastoid cells, which are in equally direct communication with the middle ear, are seldom so regarded. Almost invariably—we speak only of anatomical works—the description of them is relegated to that of the mastoid process of the temporal bone, while in diseased conditions, and especially in acute inflammatory affections of the middle ear, these cells form a most important constituent of this cavity, and one whose condition the medical attendant could not afford to overlook with safety to his patient or with credit to himself.

Again, you must remember that the terms Outer and Inner ear are used in a wider and looser sense than those of External and Internal ; for by the outer ear we are allowed to understand that portion of the ear which we can look at with the unaided eye, while by the term inner ear is understood, not alone the internal ear, but all parts of the ear that are hidden from view. In fact, the terms *outer* and *inner* applied to the ear are popular and general phrases in contradistinction to those of *external* and *internal*, which are anatomical and special. This, which is a very apparent distinction, I do not remember to have seen any reference to in any author I have come across ; certainly the standard authorities are silent in reference to it.

The middle ear terminating externally in the drumhead, close above and overvaulting which are placed the mastoid cells with their openings, it may naturally be supposed that inflammation coming up from the throat will be hindered by the tympanic membrane stretched across the auditory canal, and will rather choose to traverse passages the mucous membrane of which is in direct continuation with that of the middle ear. And this is precisely what happens. Such passages are supplied by the mastoid cells, which open directly into the middle ear ; and these mastoid cells, remember, are to be found all through the mastoid process of the temporal bone, being more developed and taking up much more of the process in some individuals than in others.

The membrana tympani stretching across the meatus opposes a barrier to inflammatory action coming up from within ; it shuts in the inflammation, and thus tends to prevent its spreading beyond the mucous membrane of the drum-cavity. Now, the mastoid cells, constituting, as they do, a diverting channel along which the inflammation spreads, and occupying so much of the mastoid



process, the involvement of them will show itself by swelling and tenderness of this process; and this swelling of the mastoid process, never very great, owing to the inflammation coming from within, and therefore being opposed in its progress by the periosteum chiefly, must be regarded as indicative of extensive mischief going on within the mastoid cells.

If, therefore, we meet with a case where we suspect inflammatory action in the middle ear, and where the auditory canal is red and tender to the touch, the patient complaining of severe earache, we must examine the mastoid process, and if there be tenderness upon pressure over it, as well as inflammatory redness of the skin, we may be pretty sure that the mastoid cells, as well as the more proper cavity of the middle ear, are involved in the inflammation; and knowing the anatomy of the parts, our conclusion will be, *especially if the skin be red*, that the purulent matter is endeavouring, though fruitlessly, for the (fibrous) periosteum intervenes, to make its way out through the external skin, and that, therefore, it is necessary for art to interpose, and that the indications are clear to cut down freely to the bone, so as to divide the periosteum as well as the occipital fascia, and thus give exit to the pent-up discharge.

In determining whether you will operate or not, there is no one sign so valuable as the presence of a more or less circumscribed redness of the skin; this, other symptoms indicating, affords almost indubitable proof of the presence of a purulent collection underneath endeavouring to make its way out.

You will not—nor need you wait for it—obtain, as in purulent collections in other parts of the body, a sense of fluctuation when pressing upon the mastoid process; the most you can expect will be a slightly doughy feel owing to the presence of a certain amount of tumefaction, but this is always trivial.

Do not be misled into supposing that because there is more swelling in front of the ear, and even a sense of fluctuation there, that on this account you must necessarily select it as the place into which you are to plunge your lancet; not at all; this would be a mistake that is made every day by practitioners of great experience and judgment, but none the less a very palpable mistake. "I think it may be said," says Hinton, "that swelling, even though painful, in *front* of the ear, is scarcely ever of serious import."<sup>1</sup>

The effect of the membrana tympani being thrown across the auditory canal is to render an acute inflammation of the middle ear much more destructive in its consequences to the parts within, and therefore to the ear as an organ of hearing, than it would be were the passage from the external to the middle ear uninterrupted; this tends to throw the whole force of the inflammatory action upon the middle ear and its contents, and were it not for the mastoid cells, which constitute a diverting channel for the inflammatory process, we may well suppose it impossible for hearing to be recovered after an acute otitis. The membrana tympani proves prejudicial to recovery, not only by circumscribing the seat of the inflammatory action, but more so a great deal by helping to shut in the inflammatory products. For, indeed, it is not correct to say that the membrana tympani opposes a barrier to the inflammation's progress, so much as that the inflammation has an affinity for, and so clings to, the mucous surface of the mastoid cells.

We are now in a position to understand the real significance of acute aural inflammation; and it is very necessary that, whatever our line of practice may be, we should have a right understanding of this most important form of inflam-

<sup>1</sup> "The Questions of Aural Surgery," by James Hinton, p. 236. London: Henry S. King and Co. 1874.

mation ; for there is no inflammation that attacks the body in which art is more necessary, and in which the hand of man can do more to avert untoward consequences than here.

It is of primary importance, when once an inflammation of the ear has set in, to keep in mind, at every stage of the case, what are the parts involved, and to adopt prompt measures calculated to limit its progress. This being the case, you will ask, is there any sign in inflammatory otalgia by which we may anticipate involvement of the mastoid cells? We have seen that redness and tenderness of the mastoid process—that is, of the parts behind the ear—indicate their inflammatory condition ; but before the obvious tenderness of the mastoid process assures you of this, you will find, if you feel for it, a little gland situated midway over the mastoid process and on a line with the outer opening of the auditory canal, immediately behind the auricle, become tender, while its immediate surroundings are insensitive to pressure ; and this gland's condition will, to some extent—more, at all events, than that of any other part of the ear—enable you to anticipate diffusion of the inflammation through the mastoid cells. Not that its swollen and tender state would be an unerring prognostic, but in affections of a deep-seated organ like the ear we must be thankful for small mercies, and a little diagnostic like this may prove of great service.

Should the inflammation of the mastoid cells become very great, the condition of this gland will be less obvious, as it becomes lost in the surrounding swelling—at least this is in accordance with my own observations.

This will be a good opportunity to quote to you what Mr. James Hinton, in his supplement to Toynbee's "Diseases of the Ear," and at page 458, says upon the subject. "I feel," says he, "compelled to express in the strongest terms my

feeling that the danger should be more habitually borne in mind and more promptly met than it often is" (the danger, that is, of extension of disease to the parts within the skull); "and especially that whenever there is any threatening of inflammation extending in the direction of the mastoid process, a free incision through the periosteum, as at first proposed by Sir William Wilde, should not be delayed. The ether-spray rendering the incision painless, removes the only objection to its performance, and every case that I have seen, in which it has either been performed or abstained from, has confirmed my conviction that the latter course is never a wise one. In weakly children, especially, caries of the bone in the mastoid region takes place with remarkable rapidity, and in adults I have sometimes found it diseased when the symptoms were comparatively slight.

"An important sign," he goes on, "of disease affecting, or tending to affect, the mastoid process, is, I believe, a circumscribed red swelling of the meatus, on its posterior wall, sometimes, but not always, discharging matter, and which might almost be confounded with a boil, if other symptoms did not indicate a more serious affection. Where such a swelling exists, operative interference should never be delayed."

Acute otitis generally always commences with earache, and this earache is almost invariably worse at night. Among its causes "taking cold" in any way is the most fruitful; very often it arises from suppressed perspiration, and the draught from the doors of a railway carriage is a fruitful cause of it.

However earache comes on, if we find the pain extremely severe, the temperature and pulse high, and the respiration hurried, the patient very restless and anxious, we cannot do better than administer *Aconitum*. I know from personal experience that it will often take away the pain as

if by magic. For this inflammatory earache, then, there is nothing like *Aconite*; give it internally, or apply a drop or two mixed with olive oil or slippery elm bark solution upon cotton wool to the cavity of the ear.

Then, while you administer *Aconite*, direct, that good large linseed-meal poultices be applied over the inflamed ear, the hotter the patient can bear them the better; these should be changed every three hours, and between each poultice the ear should be steamed, by directing the patient to hold his head over boiling water. Many eminent authorities object to the application of poultices in earache, on the supposition that they favour the growth of polypi in the meatus; but if they do, and I have never observed it, it can only be by excessive stimulation, and this can easily be avoided by previously plugging the meatus with cotton-wool moistened with olive oil. Any way, poultices cannot be dispensed with in the treatment of inflammatory earache.

The next most important remedy to *Aconite* in the treatment of inflammatory earache is *Mercurius*, and the *M. Solubilis* is the preparation I most frequently employ. The fact of there having been preceding toothache, stomatitis, or ulcerated sore throat will point to this remedy, and the more strictly nocturnal the pain is, so much the more reason for giving *Mercurius*.

I prefer giving three doses of *Aconitum* and then three of *Mercurius* at intervals, regulated according to the urgency of the symptoms, to alternating them in the usual way.

Should the *Aconitum* fail to relieve, and the patient's face become flushed, and the eyes brilliant and staring, while the outer ear becomes red and sensitive to the touch; delirium being present, then the indications will be clear for *Belladonna*; this will especially be the case if an inflammatory condition of the throat have preceded the earache, or if it follow erysipelas of the scalp.

## II.

The Temporal Bone and its Peculiarities—The Three Divisions of the Ear contrasted—The Perosseal Transmission of Sound, and the Effect of Inflammation upon it—The Action of *Pulsatilla*; Case in point—Hartmann's Experience—Otitis sometimes obscure; illustrative Case—Otitis Destructive—The Otitis of Mumps—The possibly Beneficial Action of *Veratrum Viride*.

BEFORE we resume the discussion of the treatment of inflammation of the middle ear, we shall have to turn a thought to the consideration of the peculiarities in the construction of the ear.

The first thing that strikes one as peculiar on looking at the temporal bone, is its evident subservience to the ear as an organ of hearing; it is in all essential points the ear—the hearing—bone. There is no other instance in the body of one bone only sufficing by itself to discharge, or to the same extent helping in the discharge, of the functions of an organ; for it is not, as with the bony constituents of the eye and nose, a merely mechanical support that the temporal bone exerts; it is called upon to engage in the discharge of loftier functions; it performs the twofold and seemingly incompatible functions of sound-conduction, as we see when we place a tuning-fork on the head, and sound-nonconduction, as we see from the way in which the stapedius muscle and the carotid artery, both instruments of sound, pass through it. To which statement, that it suffices by itself to aid in the discharge of acoustic functions, partial exception must be made in favour of the ossicula auditus, or small bones of the ear; these, however, are not in direct contact with it.



So the temporal bone gives entrance and transmission to sound, it limits it in various ways, and it helps, or at least analogy leads us to suppose that it helps, in the intensification of sound; it in fact magnifies, diminishes, arrests, and otherwise controls sonorous vibrations; or it would be more true to say that it aids in these functions the nervous distribution to the organ.

The cellular, air-containing portions of the bone transmit, and we may assume, though proof is wanting, that probably they intensify sound; the hard squamous and petrous portions stay the progress of sound, and the liquid-containing cavities, the vestibule with its semicircular canals, and the cochlea respond to and are influenced in accordance with the vibrations transmitted to them from the air-containing cavities by means of the ossicular chain.

When a bone has to assist in the performance of functions so complicated as these, it is not surprising that it should be of a construction the most intricate, and this is precisely the case with the temporal bone.

Then, observe, contrasting the three anatomical divisions of the ear; spoken of in our last lecture, the External, Middle, and Internal, that the external has a cutaneous, the middle a mucous, and the internal a nervous lining, the first being, roughly, for collecting, the second for modifying, and the third for receiving and determining the nature of, sound; and that these linings in each division rest upon, and even in places intermingle with, the same structure—the periosteum.

You can then understand how closely connected each part is with the periosteum or nutrient membrane of bone, and can understand how, when inflammation seizes any part of the ear, the periosteum is almost sure to become at an early stage engaged. Now it is a remarkable fact that the pain of

a periostitis is almost invariably increased at night ; for this reason we may, I suppose, account for the nocturnal character of the pain of inflammatory earache.

Then, remember, that the three anatomical divisions of the ear have this property in common—they all transmit sound ; and the inference will be that disease may so influence them as to interfere with this primarily essential function as parts of an acoustic instrument. Hence when we find that inflammation has seized upon the mastoid cells, and that, inferentially, their lining membrane, along with the lining membrane of the other parts of the middle ear, is tumefied, we must not expect them to transmit sound with the same freedom as in health. This it is very necessary to keep in mind in adjudicating as to the probabilities of a patient recovering hearing in any given case.

I met with an illustration of it a short time ago, where, in a case of severe otitis with mastoid-cell complication, a medical man applied his watch behind the patient's ear, and finding, from the patient's inability to hear upon that side, that sonorous vibrations were not being conducted by the nervous apparatus of the internal ear, prognosticated complete deafness.

A moment's consideration ought to suffice to convince any one that when inflammation has congested the mucous membrane, and this along with purulent infiltration has blocked up the mastoid cells, and so deprived them of their normal amount of air, and their walls of the power to convey impressions, an obstacle will be created to the passage of sonorous vibrations to the internal ear, the congested mucous membrane forming, in fact, a damper to the sound.

When we place a watch or a tuning-fork upon the mastoid process, the non-transmission of vibrations would imply, if acute inflammation be present, complete blocking up of the

cells, and therefore the necessity for operative procedure in the shape of incision over the mastoid process, while from the partial transmission of sound we might argue the retention of, at all events, some air in the cells. This non-transmission of vibrations may in this way often determine us as to whether we are to operate or not.

We have spoken of the temporal bone being concerned in the non-conduction, as well as in the conduction, of sound. As to the conduction of sound, it is easy to understand how a hard substance like the temporal bone can be concerned in it, but its property of non-conduction is much more difficult to comprehend; and, indeed, it is not easy to express oneself regarding the physiology of any one part of the auditory apparatus in a way that would be free from objection. What, for example, can we make of a case that presented itself at my clinique at the hospital a short time since, where there was total want of hearing for the vibrations of a tuning-fork placed vibrating upon any part of the head, however close to the ear, and where there yet was very palpable consciousness of sound the moment the tuning-fork came in contact with any part of the auricle. Such a case is in singular variance with statements made in some modern works upon aural surgery.

But we must let this pass; our digression, as it is, is hardly allowable. We now proceed with remarks upon the treatment of Acute Otitis.

We have mentioned as remedial *Aconitum*, *Mercurius Solubilis*, and *Belladonna*; but we must not rely upon these alone. In choosing a remedy, look well to the disposition of the patient, and to the general inclination to disease—whether, for example, inflammatory or not—and select a remedy that will meet not only the ear symptoms but the temperament of the patient. Among the remedies you will be obliged very

frequently to resort to will be *Pulsatilla*. Here is a case in point contracted from the report given in Wilde's "Aural Surgery," pp. 244-247:—

C. L., a female aged 21, applied — for an attack of intense pain in her right ear. She states that she has not been "regular" for the last six weeks; that she was attacked four days ago with catarrh, attended with considerable stuffing in her nose; that she had walked along the seashore the day before with a cold wind blowing upon her right side. She went to bed tolerably well, but awoke at three o'clock this morning with a violent beating pain in her ear, accompanied by a loud noise, which she likens to the puffing of a steam-engine; the pain resembles that of a sharp instrument penetrating through her ear into her head, which she describes as most excruciating. She had also some pain and soreness over that side of the head; she felt some difficulty of deglutition, owing to the pain it caused her. Coughing, sneezing, or any motion of the temporo-maxillary articulation greatly aggravated her sufferings and gave her a feeling of bursting in the middle ear. She rose at seven o'clock, felt great sickness of stomach, and had a well-marked rigor whilst dressing. The auditory canal is found highly vascular, dry, devoid of cerumen, and exceedingly tender to the touch. The tongue is coated; the pulse regular; but there is heat of skin and considerable anxiety of countenance. This patient suffered from rheumatism of the upper extremities some time ago.

The allopathic treatment for this case consisted in the application of leeches around the meatus as far in as possible, and four in the depression in front of the tragus, frequent fomenting and steaming of the ear over hot water, and the administration of a purge. Next day she was put upon *Calomel* and *Opium*, a blister was applied over the mastoid

process, the fomentation and warm vapour were continued, and a linseed-meal poultice applied over the external ear at bed-time. On the sixth day of treatment the pain and soreness had gone, but the mouth is described as "*very sore*," and so one preparation of *Mercury (Corrosive Sublimate)* is substituted for another (*Calomel*), only now it is combined with *Bark*, so that it may constitute "*a tonic*." On the eighth day, owing to there being pain on pressure over the mastoid process, another blister is applied, and now (date not given in the report) all the symptoms, save occasional buzzing, disappeared.

Now in a case like the above—and surely such cases are not uncommon—no one who has had any experience with *Pulsatilla*, used as a homœopathic remedy, would be surprised at finding all pain cease within twenty-four hours; it would be unfair, as well as unscientific, to say that such a result must necessarily occur; there may be deterring causes at work that prevent a drug manifesting its full effects; but admitting this, we can certainly say, without in the slightest degree overstating the case, that such a result would not in the least degree surprise us. Allow me to give in a case like this two or three drops of mother tincture of *Pulsatilla* in a little water every third or fourth hour, and I undertake to say all evidence of inflammation would at the end of twelve hours be slight, and that in all probability the shooting pain would have altogether disappeared.

This would not, could not, occur were we in such a case to select *Aconitum* instead of *Pulsatilla*, and for the simple reason that the one would be in relationship to the general condition of the patient as well as to the local inflammatory tendency; the other, on the contrary, while it would certainly meet the local inflammatory tendency, would be most inappropriate for the patient's general condition. Thus the catamenial irregu-

larity, the fact that the catarrh had gone on for four days and consequently had passed from the acutely inflammatory stage, the pulse being regular, and the tongue coated,—all this would point to *Pulsatilla* rather than to *Aconitum* as the remedy; while, contrariwise, had this patient been prescribed for by a homœopathic practitioner when the cold was first contracted, “four days ago,” and had she then been given *Aconite*, the probability is great that the catarrh would have been cut short, and that all subsequent sufferings would have been avoided.

Homœopathy dispenses with leeches, mercury, and blisters, not by assuming their absolute inutility for the purpose in hand, so much as by substituting in their stead less harmful and more efficient measures; and he who in Homœopathy will not select his remedies with skill, individualising each case, and applying to it a remedy the action of which accords with the patient's symptoms, is in no better position, if he be not in a worse one, than the ordinary practitioner.

We must not close with *Pulsatilla* without giving you Hartmann's testimony as to its value in Otitis:—“Experience has induced me to consider *Pulsatilla* as the true specific for otitis with delirium, horrid pain, swelling of the internal meatus, ear, and adjoining parts. According to Hahnemann's provings, *Pulsatilla* should not be given where there is much thirst or costiveness; although these symptoms are constantly present in otitis, yet I have always given *Puls.* with success.”<sup>1</sup>

Otitis beginning with earache is an easily enough recognisable affection, but there are cases, and it is to these that I wish particularly to direct your attention, in which even so severe and obvious an affection as otitis may be entirely overlooked, owing to the earache being completely masked by

<sup>1</sup> Hartmann, “Acute Diseases,” vol. ii. p. 188.

the grave mental symptoms that prevail. I refer now particularly to the otitis of scarlatina. I need not tell you that the poison of scarlatina sometimes expends all its violence upon the throat, there is no rash visible upon the skin, and we only infer that the latter has been engaged during the progress of the fever by the subsequent desquamation. These cases are of very frequent occurrence, especially so in some epidemics. Now if in the above statement you will be good enough to substitute for the word "throat" that of "ear," you will have precisely the meaning we intend to convey. The full force of the scarlatinous poison settles at once upon the ear, pain may certainly at this stage be felt, but almost simultaneously delirium sets in, head symptoms of a most severe character prevail, and, lost in anxiety about these, the attendant forgets, or if he remembers, attaches no importance to, the previously existing earache; and so the state of the ear, which after all may be the true seat of the mischief, is overlooked.

A short time ago I was called to see a girl of about ten years of age, suffering from scarlatina. The usual symptoms of a severe attack of scarlet fever were present, but the following day I found that she had had a bad night, had wandered a great deal, was now incapable of answering questions; every few minutes she would utter a wild piercing cry, and was extremely restless, very frequently sitting up in bed and as frequently lying down or rather plopping down again, the shoulder coming first against the pillow, but always manifesting an indisposition to lie for long upon the right, the affected, side. Pressing firmly upon this side anywhere about the ear seemed to give pain, but on account of her delirious state, by no means obviously so. It was not until after examination with a speculum that I became convinced of having to deal with a case of otitis, and this I inferred

from the existence of a marked swelling midway in the canal, that presented a dusky red appearance, and which I at first took to be—so peculiar was its appearance—the tympanal membrane pressed forward by discharge accumulated in the middle ear, but which after further examination I found to be a swollen state of the floor of the auditory canal. Into this swelling upon the first opportunity I passed a membrane knife, taking care to pass it well into the swollen part and to withdraw it in such a way as would leave the external incision as small as possible.

There was nothing remarkable in the character of the discharge that followed, it apparently consisted of nothing more than pure blood ; but the satisfactory issue of the operation consisted in the entire and speedy subsidence of the delirious symptoms. Complete consciousness returned, and the case from this time progressed as a moderately severe attack of scarlatina, such as it undoubtedly was, might be supposed to do, leaving no deafness or other bad symptom behind.

It is a pity I have not full notes to give of this case ; for the accuracy of facts meant to be illustrated by it, namely, the involvement of the ear principally, and the complete change of symptoms after incision, I am accountable.

My own impression of this case is that the otitis in the above instance had spread along the periosteum of the auditory canal, and that our cutting down upon it before the inflammation had time to become destructive arrested its progress and caused a consequent cessation of the head symptoms.

It is possible that the remedies we were giving contributed their part to the improvement ; still I am confident that, had we depended upon drugs alone, and had the source of irritation and consequent origin of the head symptoms



remained in full force, even supposing life to have been saved—an issue by no means certain,—there would have resulted a possibly incurable deafness. And this, remember, would be simply from an inattention of the medical attendant. This is an example of but one of the many responsibilities thrown upon the medical profession, and it, along with many an everyday experience, proves beyond question the necessity for a thoroughly practical medical education.

Is there any distinctive symptom by which we ought to be guided to an examination of the ear in a case of fever? In the instance just given the patient was very restless, and would roll from one side to the other, but generally remained lying upon the sound side, and if raised up would plop down upon her shoulder in a way showing an evident endeavour to save her head. This, taken with a wild, piercing, almost meningeal cry, ought, I trow, to secure our attention for the ear. Besides these, Wilde refers to a case brought forward before the Pathological Society of Dublin, where this symptom was present—"whenever he attempted to rise, he supported his head with his hand," which latter symptom of a feeling of weight and dislike to move his head is, says Wilde, an invariable attendant upon cerebral symptoms consequent upon otorrhœa.

When the whole force of the disease settles, during the progress of the fever, upon the ear, there very likely results erosion of tissue; ulceration of the middle ear takes place, the purulent discharge thereby produced finds an exit by perforating the drumhead, having first destroyed or injured the surroundings of the small bones of the ear, the ossicular chain becomes less pliant, its ossicles may even become detached, and be carried away along with the purulent discharge; in any case we may expect a deafness more or less obstinate in accordance with the amount of tissue de-

stroyed and of the resulting cicatricial connections formed by the delicate contents of the middle ear.

It would be interesting to know whether of scarlatina or measles acute otitis is the more frequent complication ; so far as I have seen, comparing the one with the other, the ear is less often acutely inflamed during the fever of measles than of scarlatina, while morbillous otitis is oftener a sequela than an accompaniment of the causal affection. The older writers place smallpox at the head of the list among the causes of aural disease ; in modern works, on the contrary, its very mention is exceptional.

On this subject, Hinton, in his admirable little work on "Aural Surgery," p. 220, a work you must all get and read for yourselves, says :—"Next, or perhaps equal in frequency to scarlatina in this respect stands mumps, which has an effect on the nervous apparatus of the ear, which has yet received no explanation, and affords no clue to the use of remedies ; every part of the ear being normal, so far as examination can extend, but the function almost abolished. But some cases of damage to the ear from mumps present an intermediate character, showing clear signs of a tympanic disorder mixed with the nervous symptoms. The similarity " (Hinton goes on to say) "of the nerve affection that follows mumps to that which ensues upon parturition is very striking ; and the resemblance is increased by the fact that quite frequently the latter affection also is accompanied with symptoms of a catarrhal character."

In the *British Medical Journal* of October 6, 1877, there are some remarks by Mr. S. Osborn upon Parotitis along with Acute Orchitis, of which two cases are given, which will perhaps help us in considering the pathology of the otitis of mumps. In both of Osborn's cases "the orchitis appeared as the parotitis was gradually

subsiding, and was also situated on the corresponding side of the body. The severe pain in the thorax and abdomen of the one case, and the pneumonia of the other, suggested " (says Mr. Osborn) " a communicating link between the two organs." He then goes on to ask, " Does the communication take place by metastasis, or by continuity of inflammation?" And he answers this question thus:—" The continuity takes place probably by means of the fascia; and in respect of this theory is the occasional occurrence of its transmission to the membranes of the brain, as quoted in the *London Medical Gazette*, 1851, p. 651, where death occurred from meningitis supervening on mumps. Again, in another case which came under my " (Osborn's) " notice, of an unmarried woman, aged thirty-two, parotitis was associated with mammitis on the corresponding side, the gland being indurated and very painful, without any catamenial irregularity. Here the transmission may have taken place by continuity along the deep cervical fascia; viz., from the parotid fascia to the fascia of the thoracic region, which sends septa into the substance of the mammæ supporting its various lobes."

Our contention, therefore, would be that if the inflammatory action follows the course of the fasciæ where orchitis follows upon mumps, it may also course along the same structure to the ear, and thus affect chiefly the fibrous constituents of the middle ear.

Now I ask you, is it not possible that the deafness—in other words, the otitis of parturition, which so resembles, in Hinton's opinion, that of mumps—may be due to the migration of inflammation from the ovaries to the middle ear, in the same way that a mammitis, an ovaritis, or, in the opposite sex, an orchitis, may occur from inflammation of the parotid gland?

So important, however, is it to attend to the ears, and to

examine them whenever feverish symptoms prevail, in children, that Von Troltsch, the eminent German aurist, quotes from a paper on perforations of the membrana tympani, by Professor Edward H. Clarke, of the Harvard University, this very severe but highly important sentence :—

“So necessary is a careful attention to the ear, during the course of an acute exanthema, that every physician that treats such a case without careful attention to the organ of hearing must be denominated an unscrupulous practitioner.”

Without wishing to be hypercritical, we would rather say that such a practitioner will be deemed either careless or ignorant; and he is much more likely to be ignorant, and this, too, as much from the faults of others as himself, there being a great paucity of information upon the acute otitis of the exanthemata in the ordinary text-books upon medicine.

Before I close this lecture I will tell you of one remedy from the local application of which I would expect good effects in cases of acute otitis, and this is from our *Veratrum Viride*. Its action would be quite homœopathic, as it causes hyperæmia of the mucous surfaces; and its wonderful power of lessening the inflammation and swelling of erysipelas when locally applied, suggests it as a possible remedy for an inflamed and swollen condition of the middle ear.

Anything that would diminish the swollen condition of the inflamed mucous membrane, would necessarily lessen the pain, and I know Dr. Bayes testifies to the fact that the swelling of erysipelas will sometimes go down as you apply the *Veratrum Viride* in lotion; should it do anything like this in otitis, I could hardly describe to you what an inestimable remedy it would prove.<sup>1</sup>

Bear it then in mind should you have to treat any cases of acute otitis.

<sup>1</sup> Since thus expressing myself, I have seen, in several cases, marked relief to earache from *Veratrum Viride* drops.

## III.

The paramount importance of examining the ears in febrile delirium—The occasional necessity for surgical interference in the presence of signs of increased tension of the membrane, head-symptoms prevailing—Safety of paracentesis of the membrane—Allen's so-called original method condemned—The signs of chronic middle-ear accumulation—The resistance of fascial expansion to the destructive influence of disease force PERFORATIONS, twofold variety of—The signs of perforation—Case of aural hæmorrhage.

WE dwelt, and insisted very strongly, upon the truly vital importance of attending to the ears during the progress of the exanthemata, and of satisfying ourselves as to the presence or otherwise of aural complication.

The state of the ears during the course of the fevers of childhood is a subject which should interest every educated medical practitioner quite as much, or even more, than it does the aurist. Upon the family attendant will fall the first and chief responsibility, he having the care of the patient at a time when the ear disease is at its most destructive stage—when in fact there is a greater amount of disease force, if we may so express ourselves, present than at any subsequent period; and, besides this, we pointed out that the affection is one of a nature often so insidious as to require the attendant to keep more than usually on the *qui vive*—in other words, that he must be on the look-out for an otitis, or the chances are it will be overlooked, the otitis being oftentimes so masked and obscured by the prevailing delirium and other head symptoms, that unless the attendant's mind is prepared for the likelihood of its presence, this, the primary cause of all the disturbance, may be completely overlooked.

And this, as we remarked in our last lecture, is of the greater importance, as, unlike the throat and other organs, the inflamed ear can never be left to itself; with it a *laissez faire* therapeutics will not answer, and should not for one moment be advocated. Thus, if when we expect ear-complication, we examine the membrana tympani, and if its appearance give the idea of its protruding into the meatus farther than it ought to do, its colour being of a dullish red hue, leading to the supposition of there being a purulent collection behind it filling up the middle ear, our duty will be not to hesitate a moment, but to pass a membrane knife down the well-illuminated canal of a speculum, and choosing that portion of the membrane which most protrudes, to make a vertical incision beginning from below, of about one-eighth of an inch in length.

The appearance of the membrana tympani in the cases we are referring to is thus described by Dr. Adam Politzer, of Vienna, in his laborious treatise upon the membrana tympani. "In acute inflammation of the membrane, and also in acute catarrh of the middle ear, we not unfrequently find the upper half of the membrane strongly arching out, of a dark bluish-red colour, and covered with a layer of grey, cracked epithelium. The manubrium and short process are invisible. The lower part of the membrane, however, has undergone no change of curvature, and in contrast with the bulging upper portion, appears very much in the background." This protrusion of the membrane is not necessarily confined to its upper segment, as sometimes the whole membrane is "arched out like a globe," presenting "a bluish-red suffusion." The only difficulty we can have in these cases is the getting a good view of the membrane, and the being able to manipulate with the membrane-knife, owing to the swollen and tender condition of the auditory meatus.

Supposing this convexity of the membrane to disappear of itself, which it undoubtedly sometimes does in a very short time, we might expect to discover such an appearance as is figured by Politzer at Plate I., fig. 5,<sup>1</sup> where a wreath of vessels encircles the membrane near its periphery, from which little converging branches run towards the *umbo* or centre of the membrane to anastomose with the vessels of the manubrium. I avail myself of this opportunity in order to direct your attention very forcibly to that admirably-drawn picture of a congested membrane, as you have often seen it, though with many variations certainly, at our Saturday Ear Dispensary.



Incision of the membrane in acute catarrh of the middle ear, where great pain is present, is a perfectly safe procedure, even granting that most unlikely occurrence—unlikely, that is, if all the symptoms are weighed with care—of a mistaken diagnosis, and the middle ear to be free from morbid collection, for the operation will not have done any harm. The edges of an artificial incision invariably come together and heal kindly when the discharge has ceased, and do not, certainly are not so likely to, form adhesions with the promontory or other parts of the middle ear, as sometimes happens when the membrane is forcibly ruptured. You are not, of course, to hurry into performing even such a slight operation as this without there being necessity for it; and this necessity will be furnished—and remember this—only by the existence of inflammatory symptoms, objective or subjective, in the middle ear. It would not do, for example, to perform such an operation simply from finding a fever-patient suffering from severe deafness along with fever, for of all the symptoms of fever simple deafness is one of the most hopeful, and augurs not an unfavourable but a favourable issue. Your own com-

<sup>1</sup> The adjoining woodcut gives a pretty fair idea of the appearance.

mon sense must decide you, and no amount of lecturing or rule-making can supply its place.

This being the case, you will be in a position to judge of the prudence of the advice given us by Mr. Peter Allen in his work on Aural Catarrh,<sup>1</sup> where, speaking of acute otitis, he says that "if there is no decided appearance of flattening or pushing out of the membrane to be observed on inspection, and yet unequivocal symptoms are present of matter having formed in the middle ear (perhaps filling principally the mastoid cells, and therefore not to be detected on inspection), I have in three or four instances employed the Politzer bag, and *forcibly* ruptured the membrana tympani from within. This mode of relieving the continuous suffering where the pain and other subjective signs (together with the progress and history of the case) clearly indicate that otitis has reached the suppurative stage, has not, so far as I know, been adopted by any aural surgeon since the discovery of the Politzer method of inflation; but the proceeding has been entirely successful, and without causing any shock to the system."

I dare say the eyes of the renowned Professor Politzer would start from their sockets did he hear of his admirably safe method of Eustachian tube dilatation advocated as a means of rupturing an unpressed upon, and therefore comparatively sound membrana tympani; it is the greatest libel upon the Politzer bag inflation I have ever heard of to say that you can with certainty by means of it rupture the drumhead; for remember the cases for which Allen recommends "this new procedure," this "novel way," as he calls it, are not those in which there is a bulging of any part of the membrana tympani, but where the matter is collected in the mastoid cells. In all middle ear accumulations occurring

<sup>1</sup> "Aural Catarrh," 2nd Edition. Churchill, London.



along with acute otitis, and where subdual of pain is demanded, you should first incise the membrane; after which, should the matter not flow freely, Politzer inflation may be resorted to. In this way any accumulation would find an exit, not through an aperture the size and shape of which depended entirely upon the most fortuitous circumstances, but through a clean incision made for the purpose, the sides of which would, in contrast with the incertitude of Allen's method, after giving relief to the offending material, come together and heal, as such apertures in the membrane invariably do, kindly and well.

The necessity for active and prompt interference arises, as we before pointed out, from the extremely circumscribed space into which the inflammation has got, and the rapidly destructive changes it there induces, either by the effects of mechanical pressure or the tissue-destroying effects of ulceration. This will perhaps be an opportune moment for mentioning that chronic accumulations within the tympanal cavity—and supposing the tympanal membrane to be unruptured, such accumulations will, I believe, invariably be either mucous or serous—contrast with the purulent collections of acute otitis in seldom causing any bulging out of the membrane; but, on the contrary, owing to the almost constant closure of the tube, confirmed cases often present an appearance of sinking in of the membrane, and especially a strong depression of small portions. A distinct protrusion of a thinned portion of the membrane on inflation, not rapidly receding, and revealing a yellowish colour within, may be taken, says Hinton, as a conclusive sign of mucus in the middle ear.

I cannot pass on from this subject without giving you the benefit of thoughts that have often occupied my mind in regard to the consequences to the membrana tympani of the

pressure of accumulations within the tympanal cavity, but which I do not think has been sufficiently clearly set forth by any one of the standard writers upon aural diseases.

You know—indeed, our everyday hospital experience abundantly teaches us—that when a purulent collection has formed behind any fascia or fibrous structure, such as the periosteum, it will, in endeavouring to effect an exit, find greater difficulty in making its way through this fibrous structure than it will through any other tissue or substance of which the human body is composed. This, gentlemen, is a fundamental law of surgery, and it is one so commonly exemplified, and I dare say so often insisted upon to you by your instructors in surgery, that the very mention of it will call to your minds numbers of instances in which you have seen it illustrated at the bedside. Thus you will remember how difficult it is when inflammation has seized upon the structures beneath the palmar fascia for the pus to find an exit; it will burrow beneath the fascial expansion in all directions, and even make its way up the fore-arm to the bend of the elbow in the hope of finding a situation devoid of fascia, through which it can on this account penetrate. Matter will make its way through bone, muscle, tendon—anything, in fact, rather than through fascia.

Nor do we see it in the hand alone; we see it exemplified in the thigh, the foot, the neck, the psoas muscle, and in the chest, where an empyema, *empyema of necessity*, as it is called, will point and show every endeavour to discharge itself, but generally to no purpose so long as its fibrous encasement remains unpenetrated by art.

Now, in the case of the ear, we have the membrana tympani, with its outside epithelial covering, its inside mucous coating, and midway between the two, and taken from the neighbouring periosteum of the auditory canal, its proper fibrous structure, its *substantia propria*.

In the middle ear, with its mastoid cells and its Eustachian tube, we have a periosteal lining, fibrous in its nature, but which is peculiar in blending so intimately with the mucous membrane. This lines every part of the middle ear; it is nowhere deficient; thus it helps to shut out this cavity from the internal ear on the one hand and from the external ear on the other.

Now, when inflammation seizes upon the middle ear, it is this fibro-mucous membrane that inflames, and pus accumulating in the cavity of the middle ear, an effort at discharging itself is made in every direction. On all sides the purulent collection encounters, when endeavouring to discharge itself, a firm resistance from bone protected with great security by its periosteal covering. As the quantity and therefore the pressure of the accumulating discharge increases, so does the suffering of the patient increase, and relief only comes when this pressure drives the unsupported *membrana tympani* before it, occasions rupture, and thus gives exit to the pent-up discharge. This, there can be no question, is the rationale of the occurrence of at least one form of ruptured *membrana tympani*; and I need not tell you, knowing as you do the anatomy of the middle ear, and the liability there is in its extremely circumscribed recess for adhesion to form between torn parts of the *membrana tympani* and the adjoining surface of the promontory, and knowing also the great effort nature has to make before a fibrous structure, such as is the membrane, will rupture, how much better it would have been for art, anticipating events, to have interposed, and to have incised the membrane, and so have given relief to the accumulated pus through a clean incision.

The *membrana tympani*, then, is no exception to the other fibro-membranous structures of the body in its power of resistance to the destructive influence of pus; and in these cases it

gives way, we believe, simply from the mechanical force brought to bear upon it ; thus it *tears* but does not *ulcerate*.

The pathology, therefore, of a ruptured drumhead is quite of a piece with that of the perforating ulcer of the stomach and duodenum. This ulceration will go on through the mucous and muscular coats of the intestine, and when the peritoneum is reached the destroying process ceases; but the peritoneal covering being unprotected—unsupported, that is, by other structures—sometimes tears, this being often prevented, and preventable only, by the formation of adhesion to adjoining parts.

But there is a very striking exception to be made to the statement that the membrana tympani invariably bursts, for the upper part of the membrane—that part which has got the name of the membrana flaccida of Shrapnell, and which is situated opposite the deficiency in the bony ring of the auditory canal to which the drumhead is attached—is of a looser texture than the rest, and at this point the membrana tympani very often gives way by ulceration, and not by mere rending of its structure. This is the reason why we so often see, when examining comparatively recent cases of purulent catarrh of the middle ear, that the discharge very often flows over the surface of the membrane, appearing to come from above. If you wish to see this to perfection in any case, just direct the patient, while you keep your well-illuminated speculum in the meatus, to perform what is now generally understood as the Valsalva method of inflation, and which is performed by the patient holding his nostrils firmly between finger and thumb and at the same moment forcing air up through the Eustachian tubes. This, it is obvious, will have the effect—in case, of course, the tubes are pervious—of driving the purulent discharge out through the opening in the membrana tympani, and then the discharge can be

easily observed to flow over the surface of the membrane, and to spread itself out in all directions from this uppermost point.

This aperture—the aperture corresponding to Rivini's notch—is best seen in recent cases of purulent catarrh of the middle ear, and especially where the history given is that the case commenced as acute otitis. But as you may have often noticed in other parts where abscess forms beneath fascia, however small an opening may have been effected for the evacuation of the pus, either by art or by nature, and however great may have been the resistance of the membrane in the first instance to the destructive influence of the pus, when once an opening has been made, the resistance of the fascia to structural disintegration seems in a great measure to cease, and should the discharge continue for a long time, and the fibrous structure remain bathed on every side by pus, those of its fibres at the edges of the opening lose their resistance, they become sodden, and wear away; and in this way the opening enlarges. You will often see this exemplified in abscesses about the neck, and I think the same holds good as regards the membrana tympani itself.

But more than this, the air being now and then forced out from the Eustachian tube and middle ear, the pressure of its stream against the sides of the opening will have a tendency to enlarge it. From all this you may infer that the small Rivinian perforation, as we may well term it, will be met with principally in recent cases, and the larger-sized openings in cases of longer standing; and you will also bear in mind that inasmuch as the membrane sometimes gives way from the effects of pressure alone, and before this Rivinian ulceration has formed, large openings may in even very recent cases be met with at any part of the membrane, being most frequently seen, according to Wilde, upon the inferior por-

tion of the membrane and in front of the handle of the malleus, but according to other authorities equally often behind the malleus handle. It is true, however, we often meet with a very obstinate and chronic form of Rivinian ulceration where the aperture is very small; this is very rebellious to treatment.

These explanations will, I think, go far to reconcile the discrepancies to be met with in the usual text-books upon aural diseases, there not being in these any recognition taken of a twofold variety of perforation.

You will therefore excuse my quoting some authorities which will show you that differences of opinion exist which are quite reconcilable upon the etiological principles we have laid down.

Thus in Quain's "Anatomy," eighth and last edition, second volume, and at pages 632 and 633, and in, according to the testimony of one of our principal aural surgeons, "the clearest and most reliable account of the auditory apparatus in the English language," you will find this passage: "The notch (of Rivinus) is occupied by a lax part of the membrane (the *membrana flaccida* of Shrapnell), consisting of loose connective tissue, with vessels and nerves covered by skin and mucous membrane. It is here that apertures are liable to become formed in the membrane as a consequence of inflammation."

Now compare this with the following sentences from Wilde's "Aural Surgery," p. 299, and I think we may reasonably infer that there are two kinds of drumhead perforation—the one produced by forcible rupture, the other by simple ulceration:—

"I do not think," says Wilde, "the *membrana tympani* is often perforated as the result of inflammation confined to its own proper laminae. In cases of perforation, the open-

ing is generally opposite the aperture of the Eustachian tube, which would rather lead us to believe that it is caused by a burst or rupture of the membrane, owing to a sudden jet of air striking against this thin portion of it while in a state of inflammation and tension, rather than that it was produced by either sloughing or ulceration ;” and other authorities, as we have just pointed out, say that perforation is an equally frequent occurrence upon the part of the membrane posterior to the malleus handle.

From the nature of the anatomical constituents of the membrana tympani, therefore, we infer the possibility of perforation by ulceration, or by possible distention and consequent rending ; and in the presence of divergent opinions upon the most usual situation of perforations, I think that, so long as our ideas are consonant with anatomy, we are thus far right. As to practical experience, I can only say that I have very frequently, and especially in recent, but also in old and obstinate cases, found a perforation corresponding to the situation of the Rivinian notch.

Wilde describes two symptoms which he considered diagnostic of perforation of membrane, and which are invariably quoted in works upon aural diseases. He thus describes the first of them : “ If on looking into the meatus, even without a speculum, we see a single globule of air entangled in the discharge which generally fills it, we may rest assured that the tympanal cavity is open externally. If we do not at first see this globule, and we press upon the root of the tragus with the point of the finger, we can generally, if the tympanum is open, bring it to the surface.”

Wilde’s other diagnostic sign is, that “ when a membrane is perforate, and an air globule exists at the bottom of the meatus, we can, by keeping the eye steadily fixed upon it—and as its bright convex surface generally reflects

the light it is easily seen—perceive that it pulsates, and that its action is synchronous with that of the heart and arteries.” This last sign, says Wilde, is not an invariable one, and sometimes the pulsation intermits. However, its significance is somewhat lessened by its having, since the publication of Wilde’s treatise, been observed where the membrane was intact.

That the membrane may very easily be ruptured by violence is, I think, sufficiently evident from the frequent existence of hæmorrhage from the ears in cases of injury to the head as well as in the paroxysms of whooping-cough; and the deafness of asthma is, I think there can be little doubt, very often the result of strain upon the fibres of the tympanal membrane.

Wilde, at pages 324 and 325 of his “Aural Surgery,” gives us an interesting case of this liability of the membrane to rupture. “A female, aged forty, strangled herself by twisting a ribbon round her neck. It is sufficient for me” (Wilde goes on to say) “to state the particulars of the examination as regards the ear, which was carefully removed. A section having been made through the internal ear, it exposed the cavity of the tympanum, which was found to contain a very little bright fluid blood, a trace of which had passed for some distance into the Eustachian tube; the mucous membrane of the cavity of the tympanum did not seem to be congested, but was partially stained with the blood which lay in it. The membrana tympani presented a mottled red and semi-transparent appearance, the former being the result of blood extravasated upon its surface and between its laminae. Towards its posterior attachment, a little behind and below the tubercle of the malleus, the membrane was red, and presented the triangular aperture shown in the accompanying representation; the anterior inferior angle of the aperture is nearly on



a level with the end of the manubrium, and the posterior margin of the triangle corresponds with the insertion of the membrane into the tympanic ring, but the rent does not quite run into it. Owing to the rupture of the radiating fibres—which are naturally feeble at this point—the handle of the malleus is drawn somewhat forwards and upwards from its natural position. In the preparation the chorda tympani nerve is plainly seen upon the inside bounding the upper angle of the aperture, which rather curves inwards towards the malleus, leaving a small portion of membrane above and behind it, while the posterior angle of the rent runs nearly into the tympanic ring. The tensor tympani muscle preserves its attachment to the malleus. The inner wall of the tympanic cavity having been in great part removed as well as the other ossicula, I am unable to state what the condition of these parts was, but the section of the labyrinth does not exhibit any vascularity or extravasation, and all that portion of the mucous lining of the tympanic opening of the Eustachian tube, and as much of the *cavitas tympani* as remains, presents no congestion or extravasation.”



And then he goes on to say that, “with regard to the source of the hæmorrhage, I am inclined to suppose that it came from the large branches of the stylo-mastoid artery which descend along the handle of the malleus through the exact space traversed by the rent.”

The perforations of the tympanic membrane that we meet with as the result of acute or chronic catarrhal conditions of the middle ear, are almost invariably round; and even where the handle of the malleus runs into the perforation on either side, the aperture presents a rounded appearance, evidently owing to some retraction of the radiating fibres; this

influence of these radiating fibres being to a large extent counteracted by the disposition of the circular fibres, or those lining the inner surface of the membrane.

When the suppuration following upon an acute otitis has discharged itself through a rupture of the membrane, and while the discharge is still existing, we will very often, on examining the ear with a speculum, on looking beyond the drumhead, and into the cavity of the middle ear, discover a bright spot, almost diamond-like in brilliancy, and on keeping the eye fixed upon it, it will be found to pulsate; this bright spot is not the vesicle described by Wilde, but is the reflection from the apex of the promontory, and is evidence to us that we are looking into the tympanal cavity; and although the discharge may hide from us the sides of the rent, this spot will indicate that a perforation has taken place, and the opinion we should give to the friends in such a case as regards the ultimate effect upon hearing-power, must be a guarded one. For although the majority of such cases, if recent, get well without any resulting deafness, yet occasionally unnatural adhesions between the sides of the middle ear and the membrane will result, the consequence of which will be deafness, it may be a physically incurable deafness.

along with acute otitis, and where subdual of pain is demanded, you should first incise the membrane; after which, should the matter not flow freely, Politzer inflation may be resorted to. In this way any accumulation would find an exit, not through an aperture the size and shape of which depended entirely upon the most fortuitous circumstances, but through a clean incision made for the purpose, the sides of which would, in contrast with the incertitude of Allen's method, after giving relief to the offending material, come together and heal, as such apertures in the membrane invariably do, kindly and well.

The necessity for active and prompt interference arises, as we before pointed out, from the extremely circumscribed space into which the inflammation has got, and the rapidly destructive changes it there induces, either by the effects of mechanical pressure or the tissue-destroying effects of ulceration. This will perhaps be an opportune moment for mentioning that chronic accumulations within the tympanal cavity—and supposing the tympanal membrane to be unruptured, such accumulations will, I believe, invariably be either mucous or serous—contrast with the purulent collections of acute otitis in seldom causing any bulging out of the membrane; but, on the contrary, owing to the almost constant closure of the tube, confirmed cases often present an appearance of sinking in of the membrane, and especially a strong depression of small portions. A distinct protrusion of a thinned portion of the membrane on inflation, not rapidly receding, and revealing a yellowish colour within, may be taken, says Hinton, as a conclusive sign of mucus in the middle ear.

I cannot pass on from this subject without giving you the benefit of thoughts that have often occupied my mind in regard to the consequences to the membrana tympani of the

pressure of accumulations within the tympanal cavity, but which I do not think has been sufficiently clearly set forth by any one of the standard writers upon aural diseases.

You know—indeed, our everyday hospital experience abundantly teaches us—that when a purulent collection has formed behind any fascia or fibrous structure, such as the periosteum, it will, in endeavouring to effect an exit, find greater difficulty in making its way through this fibrous structure than it will through any other tissue or substance of which the human body is composed. This, gentlemen, is a fundamental law of surgery, and it is one so commonly exemplified, and I dare say so often insisted upon to you by your instructors in surgery, that the very mention of it will call to your minds numbers of instances in which you have seen it illustrated at the bedside. Thus you will remember how difficult it is when inflammation has seized upon the structures beneath the palmar fascia for the pus to find an exit; it will burrow beneath the fascial expansion in all directions, and even make its way up the fore-arm to the bend of the elbow in the hope of finding a situation devoid of fascia, through which it can on this account penetrate. Matter will make its way through bone, muscle, tendon—anything, in fact, rather than through fascia.

Nor do we see it in the hand alone; we see it exemplified in the thigh, the foot, the neck, the psoas muscle, and in the chest, where an empyema, *empyema of necessity*, as it is called, will point and show every endeavour to discharge itself, but generally to no purpose so long as its fibrous encasement remains unpenetrated by art.

Now, in the case of the ear, we have the membrana tympani, with its outside epithelial covering, its inside mucous coating, and midway between the two, and taken from the neighbouring periosteum of the auditory canal, its proper fibrous structure, its *substantia propria*.

gether set at rest. Its existence, says Roosa, has been warmly disputed from the time of its discovery in 1717 by Rivinus, a professor at Leipsig, until the present day. Professor Patruban, of Vienna, found such an opening in 300 membranes, part of which were healthy, part diseased. He allowed a stream of quicksilver to pass into the so-called canal, and it always appeared on the other side of the membrana flaccida. Professor Politzer, too, lends his great authority to its existence as a natural condition, and Roosa himself says he believes in its existence "from the clinical fact that he has heard a whistling sound seemingly through the membrana tympani in several cases where the Valsalvian experiment was made, and when neither he nor other observers could detect the slightest opening with the eye" (Roosa, p. 185).

This part of the membrana tympani, that corresponding to the Rivinian notch, is the most movable portion of the membrane, and the part that bulges most upon an impress of air coming from the middle ear. It is this portion that contains within it the neck and small process or tubercle of the malleus bone, the handle of which passes down from here, enclosed by the membrana tympani, to end near its centre by a spatula-shaped extremity; the malleus handle thus portions off the membrane into two unequal segments, an anterior smaller, and a posterior larger segment.

The membrana tympani is composed of three distinct structures, the external layer being a prolongation of the skin of the meatus externus, the internal being derived from the mucous membrane of the middle ear, while between these two comes the fibrous layer, and which is itself composed of two distinct layers, the one external, the fibres of which radiate, the other internal, the fibres of which take a circular course.

All over the lower segment of the *membrana tympani* these radiating fibres pass from the *annulus cartilagineus*, to be inserted, like as are the spokes of a wheel into the nave, into the spatula-shaped extremity of the malleus handle; upon the upper segment of the membrane, however, the fibres take their course in front of the *processus brevis*, or tubercle of the malleus, and form a distinct layer of membrane, covering its outer surface (Toynbee). "Mr. Shrapnell, perceiving that this portion of the *membrana tympani* was not so tense as the rest, considered it to be a distinct structure, and named it the '*membrana flaccida*.' Directly below the *processus brevis* of the malleus the radiating fibres are attached to the ridge occupying the external surface of the malleus bone; but at this part the fibres from each segment of the membrane are inserted so near to each other that they all but join, and occlude this portion of the malleus handle. Towards the inferior extremity of the malleus handle, however, the fibres being attached to the sides and not to the anterior surface, a small portion of the external surface of the malleus handle at its inferior part is left bare and in contact with the dermoid layer, as may be distinctly seen in the healthy living ear by the aid of the *speculum auris* and magnifying lens" (altered from Toynbee).



The circular fibres are quite distinct from, and never intermingle with, the radiating; they are most abundant close to, but deficient at, the extreme periphery of the membrane, and they are also very scanty towards the centre of the membrane. These inner circular fibres, remember, are taken from the periosteum of the middle ear, while the external radiating fibres are continuous with the periosteum of the external auditory canal; thus the *membrana tympani* can boast of a connection with the periosteum as well as with the

mucous membrane of the middle ear, and with the periotum as well as with the skin of the external ear.

Between the circular and radiating laminae is interposed the handle of the malleus, but according to Von Troltsch a few of the circular fibres pass external to the malleus, enclosing its neck as with a ruffle. Von Troltsch further describes what are now being constantly referred to as the "pockets" of the membrane, and which are simply folds of mucous membrane, the one behind, the other in front, of the short process of the malleus. Of these the posterior is the principal, as it extends from the posterior upper wall of the tympanic cavity to the extremity of the malleus handle, and contains the chorda tympani nerve. These pockets are of importance, as secretion often collects in them (Hinton).

Of the vessels going to supply the tympanic membrane we find, as with the layers of the substantia propria, two separate plexuses; the one, the tympanic branch of the stylo-mastoid, enters the membrane at the Rivinian notch, anastomosing freely with the other, a branch of the deep auricular, which enters the membrane from the fissure of Glaser; the branches of both divide over the surface of the membrane, being separated by intervening membrane, except near the periphery, where they freely anastomose, in this way accounting for such an appearance as is figured at p. 34.

The nerves of the membrana tympani are chiefly to be found ramifying in the outer cuticular layer running parallel to the vessels, while behind the membrane, and between the handle of the malleus and the long process of the incus, and along the lower border of the posterior pocket of Von Troltsch, passes that very important nerve, the chorda tympani; this nerve, having been in connection with the facial, after leaving the ear passes down to join the gustatory nerve, thus

uniting in sympathy the drumhead and the tongue—the sense of hearing and the sense of taste.

The principal nerve-supply of the membrane is from the inferior maxillary branch of the fifth; hence in addition to absolute contiguity of structure we can understand the pronounced sympathy between the ears and teeth.

When we look at the healthy *membrana tympani*, the parts we see are these. At the uppermost edge of the membrane we may observe a whitish prominent point, the short process of the malleus, and extending from this downwards and backwards nearly to the centre of the membrane, we see a whitish or pale yellow stripe, and which is the malleus handle, widening out at its lower end into the form of a spatula. In front of and below the manubrium we see a triangular reflection, the cone of light, its apex being at the *umbo* or deepest point of the concavity of the membrane, its base forwards and downwards towards and slightly short of the periphery; and then we may, on looking closely, sometimes see shining through the membrane the promontory of the middle ear, and the long process of the incus.

This, then, is a hurried glance at the anatomy of the *membrana tympani*. Let us now inquire into the properties peculiar to this important structure. The first thing so noticeable is the dryness of the membrane; it is said to be in health the driest membrane in the body; in disease we meet with all degrees of variation in this respect, from the moist and sodden surface of purulent catarrh to the dry and crisp appearance of the membrane in old age. Wilde inclines to think that the membrane itself is specially affected by the surrounding atmosphere, and that it is in fact hygrometric, this idea being based upon the injurious influence of damp weather upon deaf patients. However, this would apply equally to other mucous surfaces; catarrhal affections



seem to be invariably at their worst in damp, muggy weather.

Connected with the discussion of the dryness of the membrana tympani will come in the way in which it is influenced by glycerine, and as this bears closely upon the treatment of accumulations within the middle ear, it will be well for us to deal with it on the present occasion.

One of the physical laws to which a membrane placed as is the membrana tympani is subject, is this: that if two liquids of different density are placed on either side of it, they will by virtue, as Draper has it, of simple capillary attraction, interchange, and, as it is generally though not quite correctly stated, the lighter fluid will move towards the denser and *vice versa*, the movement of the one being termed by its discoverer, Dutrochet, endosmosis, and that of the other exosmosis, names quite unnecessary and even misleading.

You can perform this simple operation for yourselves. Take two ordinary clinical test-tubes, place on both a tampon of cotton-wool moistened with water, then tie across the mouth of each a piece of ordinary parchment; against the one place a pledget of cotton-wool moistened with glycerine, and against the other one moistened with water only. If you watch them closely you will soon observe active movement taking place between the glycerine and the water through the parchment, while the fluid in the other remains quiescent.

I think we may reasonably hope to put to practical account such simple experiments in the removal of serous or hæmorrhagic accumulations within the tympanic cavity, and that in effecting an interchange between the fluid on the outside and that upon the inner surface of the membrana tympani, we may set up such stimulation as will lead to its entire dispersion. This would quite accord with the ordinary physical laws by which the transposition of fluids in

the process of absorption is effected in the human body. It is a point to which attention ought to be more earnestly directed.

You will doubtless ask me for some instance in actual practice of glycerine having had any such effect; it is difficult to adduce positive proof. This is unquestionable, that the local application of glycerine has long been a popular remedy for deafness. In 1851 Mr. Wakley, backed up by a Mr. Tindal Robertson, brought out a work upon "the use of glycerine in the treatment of certain forms of deafness." The critique of this work in Wilde's "Aural Surgery" is painfully adverse; still I suppose they had seen some cases cured with it, and our colleague, Mr. Tate, of Blackheath, the other day told me that his wife had been completely cured a short time since of a catarrhal deafness by means of its local application to the meatus. Patients, too, have often told me they invariably cure their catarrhal deafnesses by the instillation of glycerine to the meatus. The idea we would moot is, that these occasional cures of deafness with glycerine are instances of an impervious state of the Eustachian tube, with possibly catarrhal accumulations in the middle ear, and that the glycerine, as it were, sets up a certain amount of capillary activity, a discharge of fluid taking place all along the mucous surface of the tympanal cavity and tube, which in this way frees, or, in fact, washes out the passages.

This would be, in my mind, a thoroughly allowable scientific exercise of the imagination.

That glycerine acts in this way we have no other proof than that referred to; but in regard to the other extremity of the middle ear, if I may so term the faucial orifice of the Eustachian tube, we can understand that this effect would more readily be induced if we but bear in mind that the mucous membrane can constitute an endosmosing surface.

## V.

FUNCTIONS OF THE MEMBRANA TYMPANI—*continued*,

Its reparative property.

WHEN last we met we broke off while describing the functions of the membrana tympani with special reference to the way in which glycerine affected it, and we stated that this endosmotic action of glycerine might be almost positively proved to hold good in regard to the throat extremity of the middle ear.

We are indebted to Marion Sims as being the first to point out this very important action of glycerine upon the mucous surfaces. His observation applies only to the neck of the womb, but for it not to apply to other similarly constituted, or to all intents and purposes similarly constituted parts of the body, would be contrary to common sense, and would be in opposition to the laws upon which the transposition of fluids throughout the human body are governed.

Marion Sims at pp. 71 and 72 of his "Uterine Surgery,"<sup>1</sup> says of glycerine:—"Its use in uterine surgery occurred to me some seven or eight years ago in this way:—To a case of granular engorgement I wished to apply some caustic or other; but, whatever it was, I could not at once find it. Being very much hurried I looked around for some substitute, and it occurred to me to apply a bit of cotton wet with glycerine, merely to protect the os uteri from contact with the opposite surface of the vagina, which was also granular. I fully intended to use the caustic on the next day; but when

<sup>1</sup> "Uterine Surgery." London: Hardwicke. 1866.

my patient returned she saluted me with, 'Well, doctor, what effect did you intend the treatment of yesterday to produce?' Seeing that there was evidently something out of the way, I was quite at a loss for a satisfactory reply, and she continued, 'You ought to have told me all about it, for when I got home my linen was so wet that I had to change it, and the water streamed from me all night in such a way that I have had to wear napkins to protect myself.'

"This was all news to me, and on examination I found the pledget of cotton still wet, lying just as it was placed on the cervix uteri, which, together with the vagina, had a clean, healthy, and greatly improved appearance, compared with what it had the day before. I applied another similar dressing to see if it would have the same effect. It did, and these dressings were repeated until the case was entirely cured, since which time I have used glycerine in this way in all my surgical operations on the neck of the womb, and in other cases of organic lesion.

"The effect of glycerine thus used is very remarkable. It has a great affinity for water. A bit of cotton, saturated with glycerine, and exposed to the air, will retain moisture for weeks. When applied to the neck of the womb, as above directed, it seems to set up a capillary drainage by osmosis, producing a copious watery discharge, depleting the tissues with which it lies in contact, and giving them a dry, clean, and healthy appearance. When such a dressing is applied to a pyogenic surface on the cervix uteri for twelve hours or more, and then removed, the cut or sore will be as clear of pus as if it were just washed and wiped dry."

This is the very striking testimony borne by Marion Sims to the action of glycerine upon the mucous membrane of the vagina and neck of the womb. It causes a drainage of liquid from the neighbouring surfaces. It washes them clean

and removes purulent collection from them. It causes the granulations to disappear, and last, but not least, it lessens—though not expressly stated by Sims—the tumefaction; *ergo*, it renders pervious the channel of the neck of the womb, supposing this to be impervious from congestion; and the inference will be that if it can act in this very positive manner upon the uterine mucous membrane, it can act in a manner equally positive and with an effect equally draining, equally depleting, may I not say, upon the throat orifice of the Eustachian tube. The power of glycerine to wash away a purulent fluid from the mucous surfaces can be easily seen in cases of perforated drumhead. In a case at present under treatment the lady describes the sensation attending the application of a glycerine lotion to the meatus auditorius as if something were trickling down the tube to the throat, where she can even taste the lotion. This might apply to any other compound than one of glycerine, but with the glycerine we find the passages remain cleaner and more patulous, the point for which we contend, and one of supreme importance in the treatment of aural affections.

But we come to still more positive proof. In Nos. XXXIX. and XL. of the *Annals of the British Homœopathic Society*, and at pp. 180 and 181, and in the discussion upon a paper by Dr. Edward Blake, we find Mr. Engall adding from the riches of his ripe experience this most important testimony to our position regarding this action of *Glycerine*. This is Mr. Engall's testimony:—

“Mr. Engall said that among other remedies there was one which he thought would be of use in follicular pharyngitis on account of its action upon the mucous membrane. This was the local use of *Glycerine*. He had tried it in the form of gargle with great benefit in cases of deafness from closure of the Eustachian tube. He had been led to use it

for this purpose from observing the effect of it upon the mucous membrane of the nose in a case of congenital closure of the lachrymal canal. In this case, from the time of the child's birth the canal was so obstructed that a large tumour formed in the sac, which he feared would have ended in fistula. After several medicinal means had failed, he ordered the internal nostril to be moistened with diluted glycerine by means of a hair-pencil; after persisting in this for a few days, the distention of the sac suddenly disappeared; and although many months have now passed, it had remained perfectly cured."

The *rationale* of the removal of the obstruction of the lachrymal duct in Mr. Engall's case was probably this; the glycerine, owing to its attraction for water, occasioned, as in Marion Sims's case, a draining away of liquid from the mucous surfaces round about the place at which it had been applied, and we can easily understand that this flow, once set agoing, might wash away an obstruction, say of mucus, from the duct. Thus, then, a clearance of the tube with complete relief to the symptoms would result. And there is no reason why a like effect might not ensue upon application of glycerine to the posterior nares in cases of Eustachian tube obstruction. At least, this is a legitimate—in fact, a necessary inference. Hence we ought to consider the application of glycerine to the posterior nares as one of our means of rendering pervious an obstructed Eustachian tube. That this result has occurred in my practice I cannot say I have any absolute proof; and indeed, where we resort to other means of effecting a clearance of the tube, as is almost invariably my practice, such as the use of the Politzer bag and the Eustachian catheter, it would not be easy to establish beyond question that the glycerine had any part in the accomplishment of any such result. We must, therefore, wait in

hope, and it is well to draw attention to such a very important matter, albeit it is not practically indisputable.

It is contended that glycerine, owing to its viscosity, can supply the place of the lost portion of the membrane in cases of more or less extensive perforation; its power to do so must, however, be transitory, as the glycerine, when applied to the membrane, soon becomes absorbed, or finds its way into the cavity of the middle ear.

There is one condition into which the membrana tympani is thrown owing to the effect of old age, where glycerine often gives very decided and prompt relief; this is in cases of the deafness of advanced life, where the membrane is dry and crisp, and where there is a deficient secretion of cerumen. In these cases I have certainly seen decided relief follow the painting of the drumhead with Price's pure glycerine; Price's will be found infinitely superior to any other.

Professor Jago's opinion is that the condition of the surface of the membrane<sup>1</sup> as to dryness or moisture has a great influence upon its power of receiving and propagating sound, and inferentially he concludes that in many cases of deafness there exists a layer of dried mucus upon the inner surface of the membrane, which being sound-absorbing, transmits the sound from within the middle ear to the ossicular chain, and hence gives rise to tinnitus, and this condition as well dissipates through the middle ear the sounds coming from without and prevents the concentration of them upon the ossicles.

Now, if this be the case, we have at once an additional explanation of the utility of glycerine, for if in catarrhal deafness such a layer of dried mucus collects on the inner

<sup>1</sup> "On the Functions of the Tympanum:" Brit. and For. Med. Chir. Rev. April, 1867.

surface of the membrane, the glycerine, by becoming transfused through the tissue of the membrane, will, by moistening its inner surface, cause a falling off, an exfoliation of this inner layer, and a consequent cessation of the occasioned tinnitus and deafness.

We must now proceed with the consideration of the functions of the membrana tympani. We have supposed it hygrometric and osmotic; in neither of these functions, however, is there, strictly speaking, any difference between the membrana tympani and other portions of the mucous surfaces.

In the next property possessed by the membrana tympani it stands in contrast to, I may say, all other structures of the body; at least, I do not know of any other structure that has the power of supplying lost tissue to anything like the same extent as is possessed by the membrana tympani; or, perhaps, we had better say by the absorbents connected with and bordering upon it. When a solution of continuity, with loss of substance, takes place in any structure that is so situated as to be placed at all upon the stretch, we naturally expect that, in process of healing, its fibres will retract, and a contraction corresponding in extent partly with the amount of tissue destroyed, but more a great deal with the tension upon the structure and the consequent separation of the sides of the wound, will result. Now, nothing of the kind occurs in the case of the membrana tympani; at least, I have looked in vain, both in the treatises of writers upon the subject, and to facts as they appeared in my hospital experience, for anything like contraction of the membrane following upon a loss of any part of its proper substance, and without being able to discover it. Certainly we find writers speaking of contraction of membrane, but there is no proof that I can discover of cicatricial contraction of the membrane taking



place, although, in perforations of the membrane, we have all the conditions under which we might expect such an occurrence, and which, in any other part of the body, could undoubtedly result in nothing else than permanent contraction. As Hinton well observes, there seems to be no destruction of the membrane so extensive as entirely to put aside the possibility of repair.

Now, gentlemen, is there not in this peculiarity of the membrane a subject for the earnest and thoughtful consideration of the physiologist? is there not in it something so passing strange as to rivet our most serious attention? I think there is, and do not think that sufficient inquiry has been made into it. Hinton, after making this statement, goes on to say that he has only once witnessed the commencement of this repair of the membrane—it was in the case of a girl of nine who at three years old took cold after chicken-pox; this left an otorrhœa with perforation, and when Hinton saw her only a narrow rim of the membrane was left, the malleus being entire and in contact with the promontory. Three years subsequently the malleus had partly disappeared, but (the report says) there was a distinct formation of new membrane posteriorly and below, equalling fully half the lost portion. It was thin and of a bluish hue; and the mucous membrane still exposed was pale and healthy. The report breaks off by saying that next year the repair did not seem to have advanced farther. Moos, says Hinton, affirms that he has twice seen the whole membrane destroyed, except the part immediately attached to the handle of the malleus, and that from this the whole aperture has been closed with new tissue. Hinton then goes on to give us this unique and most unaccountable—that is to say, unaccountable in the light, or rather the obscurity, of modern physiological research—account of complete formation of a substitute for the mem-

brane. We must contract his full description of the case. A healthy man of 52, of dark complexion, who when a child had deafness alternately with an eruption upon the scalp, and in whom the right tympanal membrane showed signs of old-standing perforations, had on the left meatus a polypoid growth, which Hinton removed, only however to bring clearly into light a white membranous septum. "Around the interior two-thirds of the meatus, in the usual position of the membrana tympani, and just in front of the white septum referred to, there was perceived a rim of thick tough membrane, resembling soaked chamois leather. This membranous rim was about two lines in width; it was firmly attached externally to the meatus, and its inner margin was free. On applying traction to a part of it by the forceps, the patient complained that I seemed to be "pulling away a part of the real organ," different from the pain given by the removal of the polypus or the adherent epidermis (before removed). In short, this membranous rim answered, in all respects, to a remnant of the natural membrane attached to the cartilaginous ring, which was plainly visible. But the septum which closed the meatus appeared to be quite disconnected with this. It was attached, inferiorly evidently, within the position occupied by the remnant of the membrane with which it had no visible connection. It appeared like an entirely new formation of thick, strong, though flabby tissue. Nine weeks after this description was taken, the report says that the septum "had evidently grown into one with the circumferential remnants of the membrana tympani, forming a complete membranous layer occupying nearly the ordinary position. The line of junction was visible as a slight ridge."

This power of repair that the membrane possesses, a power so great that it amounts to an absolute capacity of regenerating tissue and supplying the place of that destroyed by

accident or disease, is a matter very necessary to remember in the treatment of perforations following an acute otitis, for it leads us not to despair of recovery to hearing so long as we find, or have reason to suppose, that this reparative process is going on.

What we wish you to infer, then, from these observations is not the impossibility of retraction following perforation, for a certain amount of retraction generally does occur, but that whereas in other structures the tendency would be progressive, in the case of the membrane, for some unaccountable reason, the tendency is just the reverse; and so much so that the deficiency created may be—it is not certain that it will be—in time filled up.

It is a law of aural therapeutics that so long as an otorrhœa is going on—and almost all otorrhœas are accompanied by perforation of the membrane—a perforation will keep patent, and that it closes only with the cessation of the discharge. From this we ought to infer the necessity not of drying up the discharge in order to facilitate the repair of the breach, but that the gradual cessation of discharge under the influence of remedies will in all probability be coeval with a repair of tissue.

But let me not give you to understand that the new structure is the same as that it is taking the place of—not at all; “the scars of perforations are almost always thinner than the natural membrane, the fibrous layers not being renewed; and they are distinguished by a darker and more transparent appearance, by being slightly sunk in, and by bulging slightly on pressure from air from within.”

## VI.

## OTITIS OF CHILDHOOD.

Prevalence of Ear-disease—The temporal bone of a child—The morbid tendencies of children, and how to deal with them—Instructive CASE.

WE now come to consider otitis as it affects children, and this, we need hardly tell any one who has had much practical experience of his profession, is by far the most important, as it is the most interesting branch of the subject, for it cannot be gainsayed that during childhood otitis is much more frequently met with, and is more likely to be overlooked than in after years. Indeed, it is wonderful how many people can remember to have had in their childhood some derangement of the ear. Earache, and discharge from either one or both ears, are affections that few who have reached middle life can say they have been absolutely free from.

Disease of the ear is not the rare and unimportant factor to be found among the catalogue of human maladies that one might suppose from the scant attention that is paid to these affections; not at all. Dr. Parkes states that among diseases of the nervous system in soldiers, epilepsy stands first and otitis second; and Kramer, the veteran German aurist, states that diseases of the ear are probably more common than diseases of the eye, as may be inferred from the greater number of the deaf and dumb. In 1856<sup>1</sup> (he says) there were in Prussia 13,297 deaf mutes and 10,206 blind,

<sup>1</sup> "Diseases of the Ear," New Sydenham Society's publication, p. 33.

which numbers are in proportion of 1 deaf mute in 1,109, and 1 blind in 1,738. And he truly says that the opposite opinion is the more natural one, because the affections of the eye, and their consequences, are in every way more obvious than those of the ear, whose troublesome accompaniment, deafness, is infinitely less apparent. This, gentlemen, ought to teach those who are commencing their professional career, if nothing else will, that ear disease cannot be relegated at will to the practice of the specialist, but that, being of such frequent occurrence, aural diseases will constitute a large proportion of the affections practitioners are called upon to treat, and that in proportion as they are understood and recognised do we find them to be important and even more numerous than we had at first anticipated, or than might be gathered from a consideration of such statistics as those just quoted.

More than this, gentlemen, childhood is a period of life at which disease of the ear is, generally speaking, in a much more curable condition than in after life. It is at this time that we can do so much with remedial agents for these diseases, and this, too, in comparatively a very short space of time. It is in childhood and up to the commencement of adult life that by far the greatest number of what I may truly term our brilliant cures are effected, and when I tell you this, you can estimate at its proper worth the funereal advice given with glaring and disgraceful ignorance, I can use no milder language, by even medical men to parents, to allow Nature to take its course with their deaf children, as in process of time "they will grow out of it;" grow out, that is, of an affection which in after life may be positively incurable, but which in the young and resilient habit offers every possible prospect of improvement. But thus it will be while this so-called "scientific"—why scientific no one can

tell—scepticism regarding drug-action remains in force; the little innocent will be allowed to grow up a victim immolated upon the altar of ignorance—an ignorance, too, not of the *literæ humaniores*, but an ignorance of the plainest common-sense principles that inform us of the greater activity of the powers of absorption in the child than in the adult. The gentle stimulus of the specific remedy, specific in the sense of being in homœopathic relationship with the disease, is all that is required to urge on in the direction of cure the force that in any other case will remain in abeyance.

In giving our opinion, therefore, as to the time that will be required for the treatment of any case of long-standing deafness, we will have to be largely guided by the age of the patient. We may take it as a rule that a deafness by which we must be allowed to infer the existence of a so-called catarrhal otitis, will be a hundred-fold more easily cured, supposing it to date its commencement from infant life, before the age of twenty-five than it would be in after years.

There are anatomical peculiarities, too, that render the otitis of childhood a special form of the affection. In the first place, it will, in considering these, be well to remember that during the whole period of foetal life the tympanic cavity is occupied by connective tissue in which the ossicles are imbedded; and that only after respiration has been established does this tissue recede before an expansion of the mucous membrane. (Quain's Anatomy, p. 772.) Wreden found that the absorption of this tissue is normally complete within twenty-four hours after birth. (Hinton, p. 229.) Then the auditory passage is in a very rudimentary state in the infant, for the osseous part begins to grow out of the temporal bone only at the period of birth, and thus the internal and middle parts of the ear are brought much closer

to the surface than in the adult. (Quain, p. 631.) The formation of the mastoid cells, too, is, as was shown by Toynbee, peculiar in the infant. These cells ordinarily consist of two portions; the one the larger division contained in and to a great extent going to form the mastoid process, the other portion of the cells being situated between the mastoid process and the tympanic cavity. This latter portion, says Toynbee, is generally horizontal, and frequently presents a concavity at its floor, in which mucus or other secretions are apt to lodge.

Now you will remember that on the inner or cerebral surface of the mastoid process we find the groove for the lateral sinus; and perforating this part of the bone are found numerous small orifices which give passage to veins from the mastoid cells to the lateral sinus, and hence you can understand how it is that the veins of the lateral sinus are the channel along which disease action travels from the mastoid cells to the posterior portions of the brain, but especially to the cerebellum. Now in adult life these cells are divided off from the meatus, behind which they lie, by its posterior wall. On the contrary, however, in infant life the mastoid process is not fully developed, and the sole representative of the mastoid cells is the horizontal portion which is adjacent to the tympanic cavity. It is the extension of these horizontal cells backwards and downwards which forms "the cavity of the mastoid process." "It is," says Toynbee, "essential that the relation of this horizontal portion of the mastoid cells in the earlier periods of life should be well understood, since disease occurring in" (or secondarily affecting) "it, then produces entirely different results from those of a later period."

And he goes on to say that "if a vertical section be made so as to pass through this horizontal portion in the temporal

bone of a child about two years of age, these mastoid cells will be observed to be bounded externally by a part of the squamous bone, which is superior and slightly posterior to the meatus externus; and it is this particular part which becomes affected in cases of disease of the mastoid cells in early life. The upper wall of the horizontal portion of the mastoid cells is formed by a layer of bone continuous with that of the upper wall of the tympanic cavity. This lamina partakes of the disease of the cavity, and thus the dura mater and cerebrum" (the text has *cerebellum*, but evidently a misprint) "become liable to be affected when, in early life, disease occurs in the mastoid cells. Before the second year this cellular cavity is comparatively much larger than at a later period."

Now the squamous plate bounding as it does the horizontal cells on the outside, and the upper wall of the tympanic cavity being formed from a prolongation of the upper plate of the horizontal cells, these two portions of bone, the squamous plate and the upper wall of the tympanic cavity, will be the parts liable to become carious in disease of the mastoid cells in the child. Hence it is the cerebrum that suffers at this time of life, but the cerebellum by extension of morbid action along the lateral sinus in after life.

Gentlemen, it is a matter of regret to me to find myself obliged to break off in order to make some general remarks upon the diseases of children. I know that in doing so I incur the charge of stepping out of my proper sphere, and of not confining myself to the task enjoined upon me; but let us ever remember that while it is perfectly legitimate, and has proved itself in a thousand ways extremely advantageous to the progress of scientific knowledge, to take up and to specially study the diseases of one part of the body, it yet will not comport with practical requirements to limit our observations to this portion alone of the human economy, but



rather to draw upon our knowledge of the affections of other parts, and from the peculiarities in the diseases of the one part to explain, if possible, those of the other. But more necessary a great deal is it to be acquainted with what are generally termed the dyscrasie that affect the body generally. Both as helping us to thoroughly understand the nature of the disease action present, and as aiding us in arriving at the indicated remedy, I have over and over again advocated the adoption of this mode of inquiry. Many, indeed, are the striking examples of the advantages it offers that I could give you even from my own practice, did time permit; but in no cases are its advantages more apparent than in the diagnosis and treatment of the diseases of childhood. In the remarks that follow do not, I beseech you, take my word for granted; but in your after experience put to the test these observations, and should they not agree with what you observe, reject them uncompromisingly. Many of the pathological remarks that follow are in agreement with standard authorities. Those regarding rickets have been already put forward by Sir William Jenner.

There are found in infant life three morbid conditions of system or dyscrasie, which predominate over all others, and which complicate, if not cause, the greater portion of children's diseases. These may be referred to under the heads of the tubercular or purely phthisical, the scrofulous or glandular, and the rachitic or rickety. In the first, the spare frame, the bright intelligent eye, the delicate transparent skin, the sharp and quick perception, and the highly sensitive and intensely affectionate disposition, are well known. It is with these patients that we find pain most acutely felt, and in whom the brain is much more likely to be affected than in the other two.

The second, or scrofulous, while bordering upon and

pathologically resembling in many ways the phthisical, is distinguished from it by very broad characteristics: the children are stout and flabby, and the cerebral faculties are more or less in abeyance. They sit lazily by the fire, are disinclined to work, sleep very heavily, are invariably regarded as being stupid, and are subject to glandular enlargements and to catarrhal discharges. In them the mucous surfaces are generally found involved; in the others, the fibrous tissues, the periosteum, the dura mater, and the pleura.

It is very necessary to be acquainted with the preliminary symptoms that lead on to the establishment of such a serious indisposition as either of these morbid states will occasion, and, if possible, to arrest it. In the one case the directions to the attendant should be to curtail the child's studies; in the other, to encourage them as much as possible. While up to a certain stage there is a strong contrast between these temperaments, we must always be alive to the fact that both are liable to drift into precisely the same ailments. Thus in both tubercle may deposit itself; and while in the first it generally selects the meninges of the brain, and in the second the mesenteric glands, giving rise to *tabes mesenterica*, this is by no means constant, for we often find the cerebral affection alternating with the abdominal and *vice versa*.

So far as the ear is concerned, in the one case we are most likely to have the morbid action travelling along the mucous surfaces and entering the middle ear by way of the Eustachian tube. In the other we find it, apparently, settling at once upon the periosteum of the middle ear, or reaching it, as we may well suppose it to do, from the dura mater and membranes of the base of the brain, but still more frequently from the periosteum of the dental alveoli. In both, convulsions are to be dreaded.

The preliminary phenomena characteristic of the approach of rickets are, according to Sir William Jenner,<sup>1</sup> (a) a profuse perspiration of the head and upper part of the chest; (b) a great desire on the part of the child to be cool and to kick off the bedclothes, even in cold weather; and (c) a most painful sensitiveness of all parts of the body. "The child cannot be moved without uttering a cry; pressure on any part of its body is followed by evidence of suffering. It ceases to play and to move, but lies with outstretched limbs as quietly as possible, for all movement produces pain; and it will cry at the approach of any one who has been accustomed to move it in play."

Now we have referred to these constitutional states because they are such frequent accompaniments of the diseases of children, and among these diseases ear affections, as might be supposed, occupy a large part. We have not mentioned hereditary syphilis, not from its infrequency, but from its being so thoroughly understood, both in regard to its treatment and the symptoms that characterise it. There is one remedy that has established its reputation in all three of these dyscrasiæ; in the last of them, however, in the case of the preliminary symptoms at all events of rickets, I have found *Iodide of Potassium* to be much more satisfactory in its action than in either of the other two. Comparisons, in respect of medicines, are like comparisons in some other matters, and are too often odious, leading to misconception; but this I can fearlessly say, that where you get symptoms of commencing rickets the *Kali Hydriodicum*, used in strictly infinitesimal doses, will come bravely to your help; and many and many a case will it be the means of enabling you to cure.

Many may object to such generalisations as we are giving,

<sup>1</sup> *Medical Times and Gazette*, 1860, vol. i.

but believe me there is a correspondence between the action of remedies and the effects of disease-force, and if you can generalise in regard to the one you can do so as well in regard to the other. So far as diseases vary in their symptoms and effects, so far only do remedial agents. I give you these indications for *Kali Hydriodicum* entirely upon my own responsibility, therefore use every caution in putting them to the test of experience.

Among the first class of children, those that are irritable, uncertain tempered, and excitable, there is one remedy from which I have derived more permanent and more uniformly good effects than from any other, and this is *Terebinthina*. Where you find patients with signs of cerebral as well as of abdominal and dental irritation, you will find from few remedies, speaking, of course, in a general way, such satisfactory results as from *Terebinthina*, given in strictly homœopathic doses, symptoms of dental and cerebral irritation being particularly indicative of it. The other remedies that group themselves along with it are, in the first place, *Arsenicum*, followed by *Belladonna* and *Aconite*; the *Arsenicum Iodidum* being peculiarly appropriate for involvement of the mesenteric glands.

In the second class of children, those that are dull and unintelligent, you will find, in otitis at all events, that *Pulsatilla* will perhaps be oftener required than any other remedy, backed up very closely by *Mercurius*, while *Calcarea Carbonica*, *Soda Chlorata*, *Graphites*, *Iodium*, and many other remedies have to be taken into consideration.

In dealing with children, whatever may be the affection, it is essential to success that you keep in mind these three distinct states of system with their remedies.

But to revert to the pathological considerations upon which we were dwelling. In the first year of infant life the

capacity of the mastoid cells is very limited, and hence we can see how it is that when matter forms the pressure will be considerable upon adjoining parts. Consequently one of the peculiar features of this form of the disease, besides causing destruction of the membrane, is to produce chronic cerebral irritation.

Toynbee gives, among others, this case, which well illustrates the pathology of this form of otitis:—

“Case I.—*Scrofulous disease of the horizontal portion of the mastoid cells before the first year of life; caries of the squamous bone; disease of the dura mater.*

“J. R., aged thirteen months, was admitted under my care as an out-patient, at St. Mary’s Hospital, on 12th February, 1852. Although she had a good colour and was not thin, her mother stated that since her birth she had never been strong, and that she had been brought up by hand, on account of herself (the mother) having an abscess in one breast. Her history was, that at six months (the text has it years, but this is evidently an error) old a discharge was observed to flow from the right ear, which had continued to the present time with but short intermissions. Three weeks ago an abscess formed at the back of the ear and discharged into the meatus. On inspection, the surface of the meatus was seen to be red, and its substance so much tumefied as to prevent its being ascertained whether the membrana tympani was or was not present. The discharge consisted of pus and mucus. The abscess behind the ear communicated with the meatus by an aperture in its posterior part. The ear was ordered to be syringed with warm water.

“February 19th. Symptoms much the same, but the discharge more offensive. Until the 1st April the symptoms gradually subsided, the discharge diminished, and the child appeared stronger. On the 2nd, however, the discharge

grew more offensive and less in quantity. On the 8th the child cried as if in pain, and started in her sleep.

"April 15th. Leeches afforded some relief, and were ordered to be continued.

"April 19th. Has had shivering fits to-day. From this date the head symptoms gradually increased, the respiration became difficult, and the child died in convulsions on the 29th.

"*Autopsy.*—The part of the sterno-mastoid muscle attached to the mastoid process was discoloured. The membranous meatus was much thickened and of a dark purple colour. The posterior part of the osseous meatus was carious; and the bone continuous with and above it, for a space the size of a sixpenny piece, was also carious, this being the portion of bone which bounds externally the horizontal mastoid space. The periosteum covering this carious bone is thick and soft in some parts and ulcerated in others. There is also internally a portion of necrosed bone about one-half the size of that externally; and upon section the inner surface is found to be part of the necrosed portion of bone which is seen externally, where it covers the tympanic cavity and extends above it. The outer surface of the dura mater which is in contact with the dead bone is soft, spongy, and of a dark colour, and partly filled the superficial cavity formed by the necrosed bone. In immediate contact with that bone, however, was a soft, pulpy tissue. The membrana tympani was absent, the mucous membrane of the tympanum ulcerated, and the ossicles carious. The lungs were tuberculous, the mesenteric glands large, containing also scrofulous matter."

This teaches us how thoroughly diseased the bony walls of the middle ear may become, and how from the bones the brain coverings and the brain tissue itself may get to be involved, and, lastly, how widely diffused is the scrofulous tendency—the psoric miasm, as Hahnemann will have it, and

how careful we must be not to confine our attention to the ear alone, but, after a careful examination of all the organs of the body, to direct our efforts to the improvement of the general condition of the system by adapting our remedies to the *tout ensemble* of the symptoms.

## VII.

THE OTITIS OF CHILDHOOD—*continued*.

Deaf-mutism—Indication for *Kali Hydriodicum*—Case of Otitis discovered only after death—Growth—Changes in ear and lower jaw—Case of unsuspected Otitis.

So far we have dwelt upon the anatomical peculiarities in the formation of the temporal bone, and especially its mastoid cells, that give character to the otitis of the first and second, but especially of the first, years of infant life. And we have also dwelt upon the prevalence of aural diseases among children; nor need you wish us to impress this more forcibly upon your minds. If you take the trouble to attend Mr. Wood's Clinique for Diseases of Children you will, I make bold to say, see sufficient evidence of this in the great number of cases of otorrhœa that occur amongst these little patients; and knowing how difficult is intercommunication between the adult and infant mind, you can easily conceive these helpless patients to often suffer acutely even long before the discharge makes its appearance, and without there being a suspicion raised as to the true seat of pain. In how many of such cases have gums been scarified and injurious drugs given without a suspicion existing as to what is causing the restlessness, the feverishness, or, it may be, the convulsions!

Speaking of deaf-mutism, Roosa echoes the opinion of all modern aurists when he states that inflammation of the ear, if not of the suppurative variety, may run its entire course in a young child, and never be recognised by physicians or



friends as a cause of aural disease. And he further truly states that a suppurative inflammation of the middle ear in an infant is sometimes first recognised as such when the pus breaks through the membrana tympani; and his inference from this is a perfectly justifiable one, that "the fact that such severe processes may go on in the ears of children and escape recognition, renders it very probable that even Wilde's proportion, in which he gives fifty per cent. as the proper one for acquired deaf-mutism, is too low a one." Roosa inclines to think that there are many more cases of children becoming deaf after, than before, birth. "It does not," says he, "require absolute deafness in a young child to produce deaf-mutism. A case of chronic aural catarrh that would only inconvenience a grown person, will make an infant so stupid that it will soon cease to attempt to imitate speech.

Gentlemen, I had rather choose for a family medical attendant a man who was sufficiently alive to such facts as these, than one who, thoroughly versed in histological research, neglected to take cognisance of these elementary, but highly significant, observations. The public, as a rule, do not require their family medical attendant to express an opinion upon some unusual form of disease the situation of which is already well known; but they do expect, and they will consider you a great ignoramus if you cannot tell them in what part of the body a given train of symptoms has its origin. Unfortunately—and you must be prepared for this—it too often happens that when you do explain to them from whence the symptoms arise, they will immediately, giving you no credit for the discovery, rush off to a specialist for this particular organ. But you need not be upset by this. You have secured their confidence and done much to establish your own reputation. Your reward will come, for other cases

will crop up where the seat of the disease has been overlooked, and then credit will be given you by contrast, and confidence secured by simple, but deserved, superiority. Howsoever, your foremost idea must be the performance of your duty; a merely secondary one, the consequences that follow.

In our last lecture we spoke of tenderness of the entire body as being symptomatic of rickets. This is according to the observations of Sir William Jenner. But there is a tenderness which is confined to the head, and is met with in very young children, and which whether it is to be taken as indicative of a rickety habit or not I am unable to say; but of this there can be no question, that it very often accompanies an inflammation of the ear, is often confined to the auricle, and is almost as often to be met by small doses of *Kali Hydriodicum*.

It will be well in connection with this subject to study the following case given by Hinton,<sup>1</sup> and indeed it is to him that we are indebted for first drawing the attention of the profession to the importance of infantile otitis:—

“Samuel H., æt. three and a half, a well-formed child, of dark complexion, was first seen on the evening of 26th May, 1855. He was then *in strong convulsions, affecting nearly all the muscles of the body, and resembling an extremely severe form of chorea*. He did not appear to be in pain; there was no heat of skin or excessive quickness of pulse. He took fluids when desired. He continued convulsed during the whole night and died exhausted about two o'clock the following morning.

“His history, so far as it could be ascertained, was as follows. *He was always a very passionate boy, especially during the last few months of his life. He had enjoyed general*

<sup>1</sup> *Loc. Cit.* Some of the report is italicised by ourselves.

good health, never complained of headache, but often seemed more unwilling *than other children to have his head touched*; he always had a habit of putting his fingers in his ears, but never complained of pain in them, nor had there been any discharge from them. *Four or five times he has been noticed to throw himself upon the ground, and roll about apparently in play, yet so strangely as to attract particular attention.* Has been deaf when he has had a cold for some time. About three days before his death he became much more deaf than before, and so continued.

"He had appeared in his usual health till the 24th, three days before his death, when he seemed to be languid and ill. On the evening of that day he fell and struck his head against the door, but not violently, and apparently quite recovered from the effects of the blow. The next day he was feverish and laid his head upon the pillow. He first became convulsed on the evening of the 26th, and died in fourteen hours afterwards.

"*Examination twenty-four hours after death.*—Appearance of the body natural. The sac of the arachnoid contained three or four drachms of clear fluid, and the membranes of the brain generally were much congested. No disease was detected in the substance of the brain, which appeared quite healthy throughout. The spinal cord was not examined. The heart was loosely contracted. A small triangular mass of soft lymph, attached by its base to the apex of the heart, lay in the pericardial sac. There were a few dull white patches on the opposed surfaces of the pericardium, which, however, contained no fluid. Structure of the heart healthy.

"The lower lobe of the left lung contained scarcely any air; it did not collapse when the chest was opened, nor crepitate beneath the finger. It was of a dark reddish hue

when cut into, and broke down on firm pressure. Portions of it sank in water.

*“Examination of temporal bones.*—The mucous membrane of the fauces around the orifices of the Eustachian tubes was very greatly swollen, and infiltrated with muco-purulent fluid, which exuded from it in great quantity when it was pressed. The Eustachian tubes were closed by approximation of the thickened lining membrane, from the faucial extremity to within half an inch of the tympanic opening. The cavity of the tympanum on either side contained a red-coloured viscid fluid; and the mucous membrane was red, thick, and velvety. The membranæ tympani were fallen in towards the promontory; they were very vascular, and the mucous layer thick.

“On the right side there were many membranous bands uniting the membrana tympani to the wall (inner) of the tympanum; these bands existed also in the mastoid cells, and contained many spots of ecchymosis. *The cochlea also (on the right side) was much congested, and contained a red fluid; and red vessels were seen ramifying on the walls of the vestibule and canals.*

“Two other children of the family are also deaf, with a like condition of the membrane.”

Here then we had: (i.) *Tenderness of the scalp*, (ii.) *extremely irritable temper*—this symptom would have been all the more significant (and judging from the report it apparently had been on certain occasions) were his temper as well *uncertain and fitful*; and, lastly, (iii.) *severe convulsions*.

It would be impossible to exaggerate the significance of each one of these symptoms, as they are amongst the most frequent characteristics of the aural affections of childhood.

There is present to my mind while I write a case of deaf-mutism, the history of which, as given me by the poor

fellow's mother, is this. When a child he had had convulsions with head-symptoms; bags of ice were applied to the scalp, and kept applied continuously for, I believe, some days; the convulsions then disappeared, but in the place of them remained that frightful, life-long affliction, deaf-mutism. A case of this sort, when studied along with that just reported, excites a suspicion of ear complication from the commencement to the end of the attack, and that a drop of *Aconitum*, or of *Veratrum Viride* tincture, well diluted with glycerine and water, and applied to the meatus, would have dispersed all inflammation and left the organ in a state capable of performing its functions.

Intimately connected with the subject of infantile otitis must ever be the development of the teeth and the lower jaw. When dentition first begins, an alteration takes place in the shape of the lower jaw, and its condyle pressing, as it does, upon the glenoid cavity, the wall of which forms the floor of the middle ear, the effect of this alteration will be to push upwards and outwards the *annulus tympanicus*. As there is then called into action a hitherto but little employed set of muscles, Wilde considers this alteration in shape of the jaw to be accompanied by change of position and calibre of the Eustachian tube, such as affords a more ready outlet for the contents of the tympanal cavity. And as you know, the chorda tympani nerve, after leaving the portio dura of the facial—the portio mollis actually constitutes the auditory nerve—runs along the lower border of Von Troltsch's posterior pocket of the membrane, and between the handle of the malleus in front and the long process of the incus behind, to emerge by an aperture in the glenoid cavity internal to the fissure of Glaser, after which it unites itself with the gustatory branch of the inferior maxillary nerve, and goes to form the submaxillary gang-

lion. This chorda tympani nerve is one of the most curious, as it is one of the most complicated, nerves in the body. In studying it, remember that it begins under the name of the Vidian as a branch of the important ganglion of Meckel, and which is placed upon the ascending plate of the palate bone, and is formed by two descending branches of the superior maxillary, and that almost immediately after its origin it is in close relationship with the faucial extremity of the Eustachian tube, and then, receiving the name of the great petrosal nerve, with the dura mater upon the petrous portion of the temporal bone, after which it is found along with the portio dura of the facial, and then as the chorda tympani with the membrana tympani. So that it is in propinquity with the throat-opening of the ear; with the brain-opening, as we may call the meatus auditorius internus; and with the meatus auditorius externus as well as the mastoid openings. It is due to this nerve that our teeth are "set on edge" whenever any grating noises impinge upon the membrana tympani. It is, too, in consequence of the close connection of this nerve with the drumhead that "teething discharges" are so common during the first and second years of infant life.

Nothing is more usual than to find a discharge from the ear taking place upon each and every occasion that the wee one "cuts a tooth." Now the pathological significance of such an apparently trivial phenomenon, considering that it is almost always found with perforation of the membrane, is simply immense. A discharge of this kind means this—that an acute otitis has been present, and has gone on to its second stage, before one ever dreamt of its being present, and while, perchance, the urgent solicitations of parents were incessant in favour of scarification of the gums. Now the appearing of a discharge in this way

ought to be sufficient to convince the most obdurate intellect that otitis, with its accompanying earache, had had a no less intimate connection than that of cause and effect with the pre-existing restlessness, sleeplessness, fretfulness, feverishness, and all the other heartrending disturbances, not to mention the dreaded convulsions, with which the unoffending sufferer was tormented.

And even supposing that the disturbances of dentition are not succeeded by aural discharges, the inference from the close connection between the nervous supply of the teeth and that of the ear, and from the fact that change of shape in the jaw occurs along with and induces alteration in form of the middle ear, will be that in all probability an otitis has more to do with the child's sufferings than any inflammation of the gum; and that, whether it has or not, the certainty remains that no case of dentition can be scientifically treated in the absence of a careful examination of the ear.

Then it induces us to ask the question whether the symptoms accompanying dentition had not better be locally treated by emollient applications to the external ear rather than by the torturing and unnatural method of scarification of the gums. The little infant cannot express to us where its pain is really situated; we can only draw inferences from the anatomical changes going on and from the subsequent train of events. All these point to aural implication. And certainly you must agree with me that during primary dentition the gums have to be lanced—I am speaking, of course, of the ordinary old-school treatment—while during secondary dentition such an operation is scarcely ever had recourse to. Why is this, if it be not that this change in shape of the jaws, coincident with the evolution of the teeth, is accompanied by a pain so great as

to be accountable only upon the supposition of a coincident alteration in form and a consequent nerve disturbance of the middle ear. For though the pain of cutting the permanent teeth is often considerable, yet it must be confessed to be very exceptional, its being accompanied by these profound nervous disturbances.

Bear with me while I call your most earnest attention to another case taken from Hinton's "Aural Surgery," and concerning which he truly exclaims, "How great a risk was run, and what, probably needless, pain endured!" This is the case, and take the lesson it teaches to heart, I beseech you:—

"The child of a medical man, aged two years, was taken ill on March 9th, 1864, with feverish symptoms, etc., and a powder with calomel was given it. On the three following days continued very ill, constantly crying out as if in pain, and with much febrile disturbance. On March 15th Dr. Wilks saw him, found him very ill, very restless, constantly moving about as if in great pain; skin hot, lips parched, pulse 104. There were no symptoms indicating any cerebral mischief, but the bowels were relaxed, the abdomen full and soft. It was thought, therefore, that his complaint might be dysentery in an early stage, and two grains of Dover's powder were ordered.

"19th. Appeared better, had slept, and was quieter. After this, however, the former symptoms reappeared, extreme restlessness and screaming, as if in pain. There was evidently some source for this, but it was difficult to discover. For a week he thus continued, throwing his head about as if in pain, but with no other cerebral symptoms, and the child appeared quite sensible. He then passed a lumbricus, and it was hoped that another purge might relieve him, but it had no such effect.

"22nd. Appeared worse, never quiet for a moment;



lying in his nurse's lap, throwing himself about, his arms, legs, and head, as if endeavouring to gain repose from some internal agony. He then began to make curious movements with his mouth, constantly thrusting his tongue out and licking his lips. For nearly another fortnight the child thus continued; with constant restlessness, throwing his head about as if in great pain, placing his hand over his head and face. The father then lanced the gums, but with no effect. Sometimes for a whole day he never slept, and chloroform was given to soothe him, which generally had the desired effect. About a month after the commencement of his illness, and when the child was wasted to a mere shadow, a discharge occurred, first from one ear and then from the other. For a day or two there appeared no relief, but after this the child began to get better, ceased to cry, took its food and grew stout. He is at the present time in good health, and his hearing seems to be good."

Here, then, was a month of the most acute, the most terrific agony endured, and which could easily have been remedied at starting had the true seat of suffering been recognised; and this, too, although the child was in the hands of one of the first diagnosticians of the day, Dr. Wilks. The attention of the attendants was evidently drawn away from the ear, firstly, by the child passing a lumbricus, and secondly, by supposing the case an early stage of dysentery, and thirdly, by the supposition of the symptoms being due to painful dentition.

But just contemplate for a moment what a month of such pain, owing origin to diseased action going on in a circumscribed space closely bordering upon the brain, means? Here it ended favourably; but can you question that many and many a case of insanity, idiocy, deaf-mutism, epilepsy, paralysis, or other grave nerve disturbances, may owe its origin to no greater cause than this?

Hinton—and you see how much I am indebted to him for the substance of this lecture—tells us that a somewhat similar case was brought to him in the year 1867. A healthy boy, aged three, had been seized four months before with severe symptoms of fever, restlessness, and pain. Consultations had been held and various treatments adopted in vain, until, about six weeks from the commencement of the attack, thick matter flowed from each ear with immediate relief. Perforations of the drumhead were discovered on each side; these healed, however, and though hearing was at first impaired, after three years it appeared to be perfect, “even quick for music.”

“Many years ago,” Hinton says, “while dissecting the ears of children who died under my observation, I was struck with the extreme frequency with which (whatever the fatal disease) the tympanum showed signs of inflammation, often advancing to an extreme degree.”

## VIII.

THE OTITIS OF CHILDHOOD—*continued.*

What to examine for—Dental Caries and Otitis—Dental Caries and Enlarged Tonsils—Excision condemned—Remedies for Infantile Otitis : *Chamomilla*, *Terebinthina*, etc.—*Calcareo Phosphorica* in Enlarged Tonsils.

WE concluded our last lecture by giving you the pathological experience of Hinton, that necropsies often reveal the fact of the tympanal cavities of children being found diseased, where, during life, no aural implication was suspected.

Strange as it may appear, the profession are only beginning to see the extreme importance of such a fact as this ; the light is only commencing to dawn upon the general body of practitioners that the condition of the ear in children's ailments, so far from being a matter upon which they need not concern themselves, is one calling for their most careful scrutiny ; and that while the treatment of long-standing and obstinate cases of ear disease may be relegated to the practice of those who make such subjects a study of special consideration, it will yet, and we cannot too often insist upon it, fall to the province of the general practitioner by his timely treatment to forestall, during the progress of these and other acute diseases, the occurrence of results that are in many cases perfectly preventable, and which, without his aid, might lead to lifelong misery.

There are few instances of acute disease more difficult for young practitioner to diagnose than those we meet with

among children. It is all very well to have at finger's-end the symptoms that characterise the exanthemata of childhood, and to be able to satisfy examiners that professional education is fairly perfect upon these points; but when we come to face the inquiries of an anxious but critical mother, the ordeal we have to pass through is one that is much more searching, and requires very different tactics from that which would pass muster in the examination hall. Thus it is very often that we are called to see a child who perhaps has been out of doors during the day, but has returned from his outing only to lie down on the sofa and complain of being tired and feeling sick, and of being, in fact, altogether out-of-sorts. You may make what inquiries you like, but beyond that he has been out that and he has felt ill since he came home, nothing, it sometimes happens, can be elicited. In such an event as this, the first part of the body you should examine, as being most frequently affected without any very painful symptoms accompanying it, is the throat; and should other symptoms, such as restlessness, feverishness, and cerebral symptoms supervene, the child being too ill to express his feelings, your examination, having failed to detect anything wrong with the lungs, the liver, or the kidneys, should next be directed to the ears.

Examine if either or both auricles be red or tender to the touch, if the little post-auricular, horseshoe-shaped gland be swollen, and if the child manifests a dislike to your examining the meatus with a speculum.

There will then have to be taken into account, supposing you suspect aural disease, the state of the teeth, and, if it be the period of dentition, whether the child has hitherto had trouble with his teeth—"cut his teeth hard," as the nurses say—or not.

If convulsions supervene, remember they are just as likely

to be excited by the condition of the middle ear as by that of any other part of the body. It would be a very difficult matter to prove, but my own impression, derived simply from unbiassed clinical observation, has long been that first among the exciting causes of the eclampsia of infants stands otitis, and certainly pathology supplies us with something more than hypothetical data in support of this proposition.<sup>1</sup> If when you are in doubt upon the matter you allow a little warm water to trickle into the ear, then, if earache be present, relief will usually follow, and the child, no longer restless, will pass into a quiet sleep; this, though not infallible, is often a valuable guide.

No sooner have the troubles attendant upon the evolution of the teeth through the gums been passed, than these organs constitute again a factor in the production of otitis. Dental caries now sets in, and the irritation accompanying the decay of the teeth is not unfrequently attended by and productive of, or, if previous aural disease has existed, excitant to, aural inflammation. Hence, in the otitis of children of about five or six years of age, it behoves us to pay very close attention to the state of the teeth and gums, and to satisfy ourselves that these are not in a condition such as would be likely by reflected irritation to act injuriously upon the ear.

But there is one condition that is often attributable to irritation in the gums and teeth, and which at the period of life we are referring to begins to give a great deal of trouble, and this a swollen condition of the tonsils. I do not know how to account for it, but, inexplicable as it is to me, it is nevertheless the fact, that among the standard works upon ear diseases in my possession, though all of them discuss the

<sup>1</sup> While revising these proof-sheets, a lady, in describing her son's case to me, gives this significant history: "*Every time he cut a tooth he had a fit except when discharge took place from the ear.*"

subject of swollen tonsils, not one of them makes any reference to decayed teeth as their cause. Here is a passage quoted from Liston's "Elements of Surgery," and appearing in a little pamphlet by Mr. Kempton on "Sympathetic Nervous Affections connected with the Teeth," where, on the contrary, due credit is given to the teeth as foci of irritation. Mr. Liston states:—"From the presence of carious teeth, or decayed portions of teeth, many evils, both local and general, ensue, besides inflammation and abscesses. They are frequently the cause, and the sole cause, of violent and continued headache; of glandular swellings in the neck, terminating in or combined with abscess; of *enlargement and inflammation of the tonsils, either chronic or acute*; of ulcerations of the tongue and lips, often assuming a malignant action from continued irritation; of painful feelings in the face; tic-douloureux; pains in the tongue, jaws, etc.; of disordered stomach, from affections of the nerves, or from imperfect mastication; of continued constitutional irritation, which may give rise to serious diseases."

Chronic enlargement of the tonsils is of such very frequent occurrence that you will every day have an opportunity of putting to the test the correctness of my assertion that their swollen condition is very often, of course I do not say always, attributable to irritation induced by disease of the teeth, or it may be of the gums alone, or even the mucous membrane of the mouth; and if this be the case—and a careful examination of the condition of the mouth and throat will often convince you that it is so—you can easily understand what a lamentable procedure is the operation, now so frequently resorted to in the throat hospitals, of excising a swollen tonsil whenever it is met with, without taking into the least consideration the neighbouring irritation that occasions it. The idea seems to have taken hold of some specialists that

the tonsils as well as the uvula are useless parts of the economy, and that the removal of them is attended with manifest improvement to the general health ; " a clean sweep," as I have heard it expressed, is the modern remedy for a large proportion of throat ailments ; the tonsils will enlarge, and the uvula will hang down, and because these misbehave they are to be got rid of altogether. Surely this idea is a bright one, and fully worthy of our intelligent nineteenth century, that because enfeeblement seizes a certain part of the body it is therefore to be cut off !

We would consider the mechanician, the works of whose engine became clogged with grit, something more than a bungler did we find him dealing destruction to its framework each time it seemed to be out of order, and yet it would not be more foolish than the mutilation of the body upon every occasion a part of it becomes swollen.

Enlarged tonsils are known to be very often associated with otitis, and it was thought by Yearsley and some of the old writers that by pressing upon the throat orifices of the Eustachian tubes they occasioned occlusion of their mouths and consequent deafness. Anatomical considerations show that this is not altogether the case, as the tonsil is situated about an inch below the tube, the palato-pharyngeus muscle entirely separating the tonsil from the tube.

The modern opinion is that the swollen condition of the tonsil, and of the neighbouring mucous surfaces, is but the expression of the condition of the mucous membrane lining the tubes, and which by occlusion gives rise to deafness.

The symptoms arising from enlarged tonsils are very characteristic : the child keeps his mouth open, is said " to breathe through his nose " (the very thing he does not do), snores in his sleep, is more than other children subject to nightmare, and is often affected, owing to the impediment

to breathing, with an arching forwards of the upper part of the chest, and which is known as pigeon-breast deformity. The small amount of air inspired, as Walshe explains in his "Diseases of the Lungs,"<sup>1</sup> makes naturally to the nearest air tubes, those of the upper lobes, while none reaches the lower, notwithstanding that the consequent descent of the diaphragm has prepared these for its reception; the lower lobes therefore collapse, and the inferior parts of the chest are consequently driven inwards by atmospheric pressure. This mechanical impediment afforded by enlarged tonsils constitutes the great argument in favour of excision of these glands, and we willingly concede its force as applicable to certain exceptional cases, but to these alone; it does not in any way afford a justification for the performance of the operation where the size of the tonsil is such as to constitute them a very trivial, if at all an obstacle to the admission of air, and besides we believe that there are few if any cases where with proper remedial measures enlarged tonsils need occasion an inconvenience sufficient to justify excision.

Dr. Meyer's opinion is that a deaf patient who breathes through his mouth, and has a thin compressed nose, affected with vegetations, adenoid growths, as they are sometimes called, but which is better understood by the old term, a granular condition in the naso-pharyngeal cavity, and that to confirm this we do not require even to notice the speech.

Now that we have touched upon these two diathetic conditions with which we so often find otitis associated, that of difficult dentition and of hypertrophied tonsils, let us consider very briefly their treatment.

For the difficulties of dentition we have many and efficient remedies, to which we must be guided by the

<sup>1</sup> "Diseases of the Lungs." London, 1860.



symptoms ; among these you must ever have present before your minds such well-known drugs as *Aconitum*, *Belladonna*, and *Mercurius*, for the symptoms of which I must leave you to consult any of our ordinary text-books ; the last of these is, we may mention, especially useful in the affections of children.

We then come to an almost equally well-known remedy in Homœopathy, *Chamomilla*. It is not a drug of which I have had much experience, but its symptoms are too expressive to forego a reference to them. *Chamomilla* is indicated by a hyperexcitation of the entire nervous system, a constantly changing disposition being indicative of it ; the child is seized with attacks of rigidity of the body, kicks everything off him, he screams with passion at one time, and at another cries most piteously. This changing disposition will sometimes show itself in the face, for at one time the child's cheeks will be hot and burning, and at another pale and exanguine. A heat and redness of one cheek only, with sweat of the head, and unquenchable thirst, with expression of intolerable suffering, are extremely indicative of *Chamomilla*, while in regard to the ears, otalgia, with extreme dislike to sounds, is symptomatic of it. Some time since Dr. Yeldham reported a case beautifully illustrative of the action and proper dose of *Chamomilla* ; you will see it in the *Monthly Homœopathic Review* for February of this year (1877). Then there is that familiar old remedy *Terebinthina*, to which I have already referred, and which, as I have said, I believe to be much too neglected by us in the treatment of children's diseases. I am one of those who regret that as Homœopaths we have devoted so much attention to the investigation of the actions of substances that were unfamiliar to the profession at large, to the exclusion of our old and standard drugs.

Turpentine is known not alone to exercise a very decided irritating effect upon the intestinal mucous membrane, but to have as well a very pronounced cerebro-spinal action. Thus symptoms of intoxication, vertigo, mania, and other well-developed cerebral effects belong to it. Extreme restlessness at night is amongst its symptoms. Now, if you look to the Article on *Terebinthina* in Hull's Jahr, you will find amongst the curative effects, *a burning soreness and interstitial distention of the gums*. From whence this symptom is taken I am unable to say; but this I can confidently assert, that there is no remedy which in cases of difficult dentition has given me such uniformly happy results as *Terebinthina*, used in purely infinitesimal doses. Where dentition is accompanied by suppression of urine and convulsions, or where the child is wakeful at night, screaming as if frightened, has a staring look, clenches her fingers, twitchings in different parts of the body being prevalent, where she picks her nose and is troubled with cough, whether or not worms are present, in these instances I have found *Terebinthina* positively curative. The little girl is cross and irritable, her temper is very changeable, she has a dry short cough, complains of aching in her limbs and her head, and is very often feverish; these are indicative symptoms.

As to its special relationship to otitis, I can only say that I have often found it curative in the otalgia of children old enough to express their sufferings, and conclude from this its utility in the otitis of those too young to pronounce upon it; and even amongst the allopaths its internal use is sometimes resorted to for the purpose of preventing the onset of inflammation after paracentesis of the membrana tympani and catheterisation of the Eustachian tube. (*Weber, Monatschr. für Ohrenheilkunde*, 1871.)

In one case of obstinate eczema in a child, situated in front of the left ear, and tending to affect the eyelids as well,

I was unable to effect a cure until *Terebinthina* was prescribed. These eczematous of children that border upon the ear often alternate with otitis.

This remedy seems to be peculiarly appropriate to the affections of children, its intestinal irritations are accompanied by symptoms like in every respect to those we meet with in association with the diseases of child-life; and more than this, in presence of its symptoms, it never disappoints—an assertion that, while it certainly holds good of all remedies, is yet more obviously true of some than of others.

There are two other drugs of which you must take cognisance in the treatment of these cases, and they are *Sulphur* and *Iodide of Potassium*. The action of the former was much misunderstood by the early followers of Hahnemann, who supposed that its good effects in obscure cases of painful diseases were due to some incomprehensible antipsoric property. This, I have shown in my pamphlet on "*Sulphur as a Remedy for Neuralgia and Intermittent Fever*," and again in the *British Journal of Homœopathy*, vol. xxx., is not the case, and that its good effects are owing simply to its being in homœopathic affinity with the symptoms. You will find *Sulphur*, given in mother tincture or in any of the dilutions, of great help to you in treating obscure derangements in children, especially where the infant, though listless and unobservant, cries out with sudden pain, and when it seems doubtful whether the source of irritation is intestinal or cerebral.

Pathology would lead us to *Iodide of Potassium*, but I have had no experience with it in very young infants; in those of four or five years of age it is of exceeding utility when sufferings arise from catarrhal otitis, with constantly recurring nocturnal otalgia.

And now in regard to the treatment of enlarged tonsils.

So long ago as 1867 I wrote a paper upon the action of *Calcareæ Phosphorica*, recommending it as remedial in cases of tonsillitic enlargement. Since that time I have had, as might be expected, a good deal of experience in these cases, and I can say, and say without any great predilection for my own remedy, that I have never found any agent so satisfactory in its action upon these glands when enlarged as the *Calcareæ Phosphorica*. That it will not, unaided, cure every case is only what those who give credence to the homœopathic law ought to expect; but that it will by itself cure a great many of these cases, and that it will remove the accompanying deafness, is, in all conscience, a matter of sufficient importance. Here, for example, is a case taken from the above-referred-to paper of mine, and in which I can vouch for the fact that the tonsil never afterwards gave any trouble, and the patient is now a healthy young woman:—"The subject was a little girl about seven years old; she had recovered from scarlatina six months, and, though she felt some uneasiness in her throat, there was nothing to cause anxiety until last March, when she appeared to be getting thinner and less inclined to eat. On examining her throat, I found on the right side the tonsil enlarged with what resembled a fleshy growth upon it, not unlike a polypus, while on the left slight swelling alone was observable. The enlargement on either side was perceptible to the touch from outside. Opening the mouth did not give pain, but she was very much averse to it, owing to her natural timidity. The treatment was begun with *Baryta Carbonica*, but, as there was no improvement by the end of two weeks, this was discontinued, and the third dec. trit. of *Calcareæ Phosphorica* substituted for it. Beneficial effects were manifest from the first dose, and steadily continued till cured, which she was by the end of a fortnight."

The tonsils had by this time, as well as I remember, re-

sumed their normal size. All I have, with present experience, to add to the case is, that it sometimes takes a much longer period to reduce the size of the tonsils, and that the action of the second decimal trituration is much to be preferred to the third.

Amongst the cases in this paper is one where deafness was present along with the swollen tonsil, and where the condition of the tonsil *minus* the deafness recurred eight months after treatment. The air of Southampton, and especially the damp situation of their house, evidently disagreed with this patient, and they left the place, so that I am unable to give the subsequent history.

Here is a case taken from an old Southampton dispensary book, in which, though the report is not as full as could be wished, the effect of treatment was very decided. A young delicate girl of nine years comes, in the June of 1873, complaining of deafness on both sides, which she had had for two years, and which had resulted from a combined attack of typhoid fever and measles, and for which she had been unsuccessfully treated the summer previous at the Royal South Hants Infirmary. The tonsils were much enlarged, and the ears, it is said, used to discharge very much, but have ceased to do so of late. The malleus handle was more than usually prominent on the left side; beyond this no observation is recorded as to the condition of the membranæ tympani. During the first week, and after treatment with the third decimal of *Calc. Phosphorica*, in my absence the dispenser reports the return of discharge from the ear—the left. The first fortnight found but slight amelioration, and then the second decimal was given; by the end of the fourth week the report testifies that she can hear much better, and contemplates going to school, which she never has been able to do owing to deafness. The last report, after six weeks'

treatment, was : Complete restoration to health. She could hear conversation perfectly, and, except for herpes zoster on the left side of her chest, she was quite well.

As well as I can remember, the tonsils, though not fully reduced to normal size, were so sufficiently to prevent inconvenience.

I have now under treatment a girl of eighteen who has suffered all her life from deafness, with enlarged tonsils ; she has had the advice of upwards of fifty doctors, having been much thrown amongst members of the profession when residing in a hospital. Two years ago the left tonsil was excised with temporary benefit, but now the right has grown so large as to scrape against the opposite side when she speaks. The testimony of this patient is that she had never found real relief until *Calc. phos.* in 2nd dec. trit. was given ; now she can speak and swallow without inconvenience, her hearing powers have much increased, and the large gland has greatly diminished in size.

Experiences like this cannot be gainsayed. Then, some of you saw last Saturday at the dispensary a case of enlarged tonsils with deafness where we gave *Calc. phos.*, and with such manifest effect as to improve the hearing powers from three inches to fifteen inches. Here, however, along with the *Calc. phos.* we used a lotion to the nostrils of *Liq. Sodæ Chloratæ*, a circumstance that gravely detracts from the value of the evidence.

## IX.

Post-nasal catarrh—The development of the wisdom-teeth and the jaws—  
Pyæmia.

WERE we to continue the discussion of the treatment of the throat affections usually found in connection with otitis, we would occupy much more time than would be reasonably allowable in a course of lectures upon aural inflammation. The action, however, of *Calcareæ Phosphorica* in cases of deafness in association with enlarged tonsils is so strikingly decisive that I would earnestly entreat you to pay great attention to it in the course of your clinical practice, for it may be that the indication for the *Calc. phos.* is not confined to the state of the tonsils so much as to the condition of the submucous glandular distribution of the surrounding surfaces.

Nor must you suppose, if alveolar irritation with dental caries exists, that anything short of local treatment directed to the teeth will exert a permanent influence upon the size of the tonsils.

In the case referred to at the conclusion of our last lecture we told you that the use of a lotion of *Liquor Sodæ Chloratæ* detracted very gravely from the evidence in favour of the action of *Calcareæ Phosphoricæ* in that particular case. The reason of this is that *Sodæ Chloratæ* has a very decided action, as you can see from my published proving of it in the *British Journal of Homœopathy*, upon the mucous surfaces, and as it will cause, so also will it lessen, the congestion that

we meet with in old catarrhal affections, and by applying it directly to the floor of the nose, we brought its action to bear with greater effect upon the upper part of the throat and the faucial orifices of the Eustachian tubes than would be possible in any other way.

You will find a much more obvious influence exerted upon the middle ear by the application of remedial agents to the floor of the nose than to any other part; and besides, the naso-pharyngeal mucous membrane being acted upon by the first impress of inspired air, is often involved in the catarrhal process, and therefore in itself becomes thickened and its surface covered with tenacious muco-purulent secretion; an impediment is in this way created to the free ingress and egress of air in respiration, a condition that a local application, even the simple douching with cold water, will relieve more efficiently than would be possible by acting upon any distant part; and this diminution of naso-pharyngeal congestion is additionally serviceable, as in order to secure patency of the Eustachian tubes it is necessary to maintain an unobstructed channel for the passage of air through both nostrils.

We must now pass on from the time of dentition amongst children to the period at which the wisdom-teeth begin to display themselves; and that irregular or diseased conditions of these constitute factors in the production of surrounding ailments can be easily shown. "The germs of these teeth are peculiarly situated—those of the upper jaw being placed high up in the tuberosities of the superior maxillary bones, while those of the lower jaw are developed at the base of the coronoid process, and are, in fact, embedded in the cancellous structure of the bone.

"Between seven and eight years of age, the *first* permanent molar has cut the gum, and assumed its position in



the jaw immediately behind the second temporary molar, where it is placed between it and the base of the coronoid process. At the age of fourteen, the *second* permanent molar has made its appearance, and holds the same position with regard to the first permanent molar and the coronoid process, as the latter had previously done to this process and the second temporary molar. It is, therefore, evident that the space occupied by the second molar was produced by the backward growth of the jaw. In order that the *third* molar or wisdom-tooth should have sufficient space to enable it to assume its proper position in the jaw, the same process of growth must take place, and the jaw become elongated to the same extent as the antero-posterior diameter of the wisdom-tooth. In the majority of cases this is what takes place; but there are, nevertheless, a large number of instances in which more or less disturbance is set up in consequence of an abnormal condition in the rate of growth between the tooth and the jaw, or even from an arrest of growth in the latter, while the former continues to develop itself. The consequence is that the tooth cannot extricate itself from the jaw for want of space in the horizontal ramus."

But this, which is taken from Mr. Kempton's pamphlet, does not seem to be the only explanation; in some persons, on the contrary, there seems to be an actual arrest, a sudden stoppage, in the evolution of the wisdom-teeth, from causes wholly inexplicable. I have at present under treatment a lady, aged about forty-three, in whom three of the wisdom-teeth, the two upper and one of the lower, have never come forward, although the right upper tooth and the left lower one are plainly visible underneath the gum, and apparently are not much displaced. The left lower tooth is so firmly impacted that it baffled the vigorous attempts of a first-rate dentist at extraction; he could not even move it. The

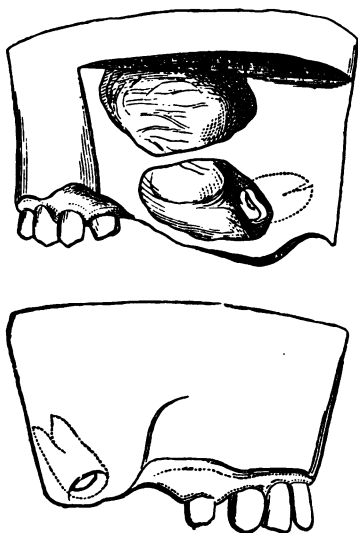
left upper tooth, on the other hand, is misplaced, and is the evident cause of a large cyst which has formed in the bone.

In all cases of otitis, whether acute or chronic, you must be careful to make a sufficient examination of the jaws; and, remember, that no matter how aged the patient is, so long, of course, as they have passed adult life, it is possible for them to suffer from the consequences of impacted wisdom-teeth.

In examining for these you ought to be well acquainted with the natural shape of the alveolar ridge, both of the upper and of the lower jaw; the lower jaw especially undergoes a very important alteration in shape, and consequently in feel, when the permanent teeth are lost. You see the change very well portrayed in this plate in Gray's "Anatomy;" you see how the angle of the jaw has changed from being one of  $120^{\circ}$  to be one of some  $140^{\circ}$ ; and, more important still, the alveolar arch has become absorbed, so that if you run your finger along the jaw you will find the surface into which the teeth were formerly inserted perfectly smooth; and if it is not smooth, remember there must be a cause for it; either the fang of an old tooth has remained behind, or else a whole tooth, most frequently, but by no means invariably a wisdom-tooth, has remained undeveloped.

If you look at this cast of the mouth of the patient just referred to you will see this very plainly exemplified; here on the left upper jaw is a prominent ridge, and in connection with it a swollen condition of the jaw; this ridge should not be present, and until my attention was directed to it by Mr. Gurnell Hammond, of Leinster Square, I honestly confess I had not the least idea of its import. It indicates that something besides the maxillary bone lies underneath; in the present case it is a wisdom-tooth, and the swollen condition in association with it means that a cyst has formed in con-

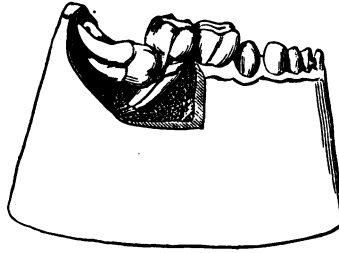
sequence of the irritation created by the unnatural position of the tooth in the bone.



NOTE.—The above woodcuts are taken from the cast; the upper one, that of the left upper jaw, has a portion cut out to show communication with the cavity of the antrum. The lower one is of the right upper jaw.

Then, if you look at this cast of another case you will see the same exemplified, only under different conditions. Here the patient, a man of forty-three years of age, had suffered with swelling and pain on the right lower jaw caused by an abscess far back between the cheek and gum, followed by fistulous openings bursting inside into the mouth as well as outside upon the cheek and neck, and causing the jaw to become rigid. Mr. Thomas Bryant as well as other surgeons saw the case, but could make nothing of it. Mr. Weiss, on seeing the swollen condition about the angle of the jaw and the fistulous open-

ings, and more particularly the way in which the teeth were pushed forward, suggested the removal of the second molar, in order to get at a wisdom-tooth which he felt sure must be lying behind it, and so be the cause of the trouble. On removal of this molar, a part of a crown of a tooth lying horizontally could be seen behind it, and below the level of the alveolus. This proved to be a wisdom-tooth, which was subsequently extracted, to the complete relief of the patient.



In the above case there was not, to be sure, any aural complication present; but knowing as you do the intimate anatomical connection that exists between the ear and the teeth, you will recognise the possibility of such involvement, and to be forewarned is to be forearmed. Our duty is to lay down correct general principles by which your daily practice ought to be guided; and if you require any more direct proof, such a case as this from Mr. Kempton's pamphlet will supply it. "H. L., aged twenty-two, a lawyer's clerk, had suffered from neuralgic pains in his ear for more than three years; they were accompanied with an occasional foetid discharge. The neuralgic paroxysm lasted for some hours. The principal seat of pain was directed towards the last molar tooth on the left side, and the dens sapientiæ was found to be defective. After this tooth was extracted the discharge stopped, and the patient lost all his neuralgic pains.

Until the teeth were examined the pain was attributed to rheumatism."

That important cavity in the superior maxilla, the antrum, is sometimes affected with inflammation, as I had an opportunity not long ago of witnessing, and here you will find most intense earache to prevail along with the pain in the face and teeth; in these cases there is present much redness and sponginess of the margins of the gums, with looseness of the teeth, owing doubtless to the condition of the alveolar periosteum, and they are amongst those in which the *Iodide of Potassium* acts so well. (See Graves's "Clinical Medicine," p. 860, for a case of alveolar periostitis treated successfully with *Iodide of Potassium*.)

We must now turn to the consideration of some complications of otitis that as yet we have not touched upon. Among the most important of these is, as you might expect from the construction of the middle ear and its mastoid cells, pyæmia. And then you must remember that, as can be seen from the accompanying section of a temporal bone,<sup>1</sup> the Eustachian tube does not leave the middle ear from the most dependent portion of its floor, but rather from the anterior wall of the tympanal cavity, midway between floor and roof. Hence this arrangement allows of a welling up of purulent secretion or of other fluid in the cavity of the middle ear. The consequence of this, as you may naturally suppose, is that, some of the discharge lingering behind, there will be induced a proneness to purulent infection, the more so from the close proximity between the mastoid cells and the lateral sinus, small veins passing from the one to the other. As well also from the proximity between the jugular vein and the lower wall of the middle ear there is apt to be set up a

<sup>1</sup> *Vide* frontispiece, where the commencement of the Eustachian tube can be seen below and to the right of the recess indicated by the figure 3.

phlebitis, followed, it may be, by lobular abscesses in the lungs, liver, etc., or, perhaps, a gangrenous condition of the lung (*Gull*), or a general pyæmic state, with disorganisation of the joints and an albuminuric condition of the urine.

The symptoms leading to the supposition of pyæmia will be, amongst others, the occurrence of headache, shivering, often amounting to severe rigors, followed by heat and perspiration, with increase of temperature, these symptoms in every way resembling those of a severe paroxysm of intermittent fever. Such symptoms existing along with a discharge from the ear, tenderness round the auricle, and a swollen and red state of the lymphatics along the side of the neck, will leave you without any doubt as to what you have got to contend with.

It is in old-standing cases of otorrhœa you are particularly likely to be deceived, for at times the symptoms will be very alarming, the patient even becoming unconscious and delirious, shivering and spasms being present, and yet these may disappear, but only to again return. This partial recovery from septic poisoning in aural disease accounts, I suppose, for the frequent existence, as revealed in the *post-mortem* room, of secondary deposits in the lungs and upon the pleura, as well as in the mesenteric glands of these patients.

Our principal concern in reference to this matter must be the proper homœopathic treatment for threatened pyæmia. In the first place, it is above all things necessary to see that the meatus and middle ear are kept free of discharge. For this purpose nothing is better than the syringing with tepid water, impregnated with a few drops of Condyl's fluid, or still better with Sulphur soap, while the air douche is, at the same time, freely used; after which we may apply a lotion of *Calendula*, or of *Hydrastis*, and *Glycerine*, somewhat diluted with water; I prefer to use a

plain infusion of *Calendula* to the tincture ; this is cleansing, and is besides an aid, by virtue of its healing properties, to recovery. In old standing cases of otorrhœa I believe *Hydrastis* to exert a much better effect than *Calendula*.

If, however, the symptoms of pyæmia are at all urgent, you will obtain much better effects from *Arnica* than from either of them. *Arnica* seems to exert an almost specific effect upon septic poisoning. In illustration of this I must direct your attention to a clinical lecture published by me in the July number of this year (1877) of the *British Journal of Homœopathy*. This is the report, slightly altered:—"The patient was a lady who suffered five weeks after labour with an abscess of the left breast, accompanied with great weakness. I opened this breast at a time when there was just a threatening of similar mischief in the right—to wit, hardness and tenderness ; and it discharged healthy purulent matter very freely. Soon after the right breast took on action it also became swollen and red, pitted on pressure, and put on all the appearance of being the seat of a gathering. I opened it without any result, no matter came. I then waited three days, and now things had become so decisive in favour of again operating, that I no longer hesitated, but plunged a lancet freely into the most dependent part, and, as expected, pus, mixed, however, with blood, came, though stiffly, away. This was at six o'clock p.m. Towards night the breast got painful, and by the middle of the night was swollen to a tremendous size, the opening I had made had closed up completely, the angry bright redness of the surrounding skin had changed to a malignant purple hue, and the patient had become fearfully exhausted and shivered. Matters were getting more urgent every moment, and I have little doubt what the result would have been had not the person attending, one of those experienced domestic lady lay practi-

tioners, of whom we meet with many in Homœopathy, applied an *Arnica* lotion; this at once relieved the pain, caused the swelling to lessen, the purplish redness to disappear, and the abscess to discharge healthy pus very soon after."

This to be sure was not an ear case, but there was present the same morbid process as we find to obtain in aural disease where purulent infection threatens, and on this account is interesting to us in such connection. In reference to this case, I made, in the lecture from which it is taken, the remark that "we frequently meet with conditions of system where there seems to be an amount of vitality insufficient to effect a separation between purulent fluid and the healthy blood. The effete materials, instead, therefore, of being thrown off in the form of collections of healthy purulent matter, mingle with the stream and disarrange the equilibrium of the functions throughout the entire body. This is practically what in everyday experience we observe. The beauty of the action of *Arnica* was seen in its enabling the capillaries to accomplish what unaided they would have been incapable of effecting."

In these pyæmic states *Arnica* finds in *Arsenicum* a compeer of established fame. Speaking of these remedies, and in connection with the allopathic idea that the formation of pus in a wound is necessary to the production of a cicatrix, the discursive but reliable Glauvogl, now unhappily no more, tells us that "from them" (*i.e.*, homœopathic drug provings) "we know that *Arnica* and *Arsenic* chiefly, very decidedly delay, or utterly prevent the formation of pus, and that for this very reason cicatrisation and cure *are especially hastened*."

"Even in smaller injuries, in cuts of small extent, this effect of *Arnica* may be perceived without the aid of any magnifying glass. One sees clearly how the serum of the wound becomes thickened, how the edges of the wound



approach each other, and finally agglutinate, and that *without the formation of pus*. This can only happen by the withdrawal of a certain quantity of water from the serum. This phenomenon, and the observation of an increase in the watery contents of the urine after the internal use of *Arnica*, without increased drinking, and, indeed, without any other quantitative or qualitative change of the other constituents of the urine, lead to the conclusion that the fundamental action of *Arnica* consists in the withdrawal of water from the organic tissues in general."

Some of these statements of Glauvogl's may be questioned ; they are, however, interesting to us, as well as the conclusion to which he comes. "Hence," says he, "where it is possible I always give a few doses of *Arnica* a day or two before and after every bloody operation, whether occurring in the domain of surgery, ophthalmology, or obstetrics, or before and after every delivery, even where it is quite normal, and since I have pursued this course I have never met with a case of childbed fever." Glauvogl, therefore, as you can see, regards *Arnica* as a prophylactic against pyæmia. We would in no wise thus limit its action, but would use it as well where symptoms of pyæmia had already established themselves.

The indications for *Arsenicum* will be a highly irritative state of the system, the lymphatics are inflamed, the part itself is very painful, its veins are tender, swellings occur at a distance from it, the body temperature runs up rapidly, the patient looks distressed, shivers, vomits, and changes suddenly from a state of collapse to one of violent perspiration.

A case illustrative of the condition that calls for *Arsenicum* was published in the *Lancet* of February 2nd, 1861, by Mr. Prescott Hewitt. "A young lady, eighteen years of age,

had a discharge from the ear, as a consequence of measles. About four weeks after the occurrence of the discharge she was seized with severe chills, which were followed by much fever, a furred tongue, and typhoid symptoms, with suppression of the discharge. When Mr. Hewitt saw the patient the chills continued, the skin had assumed an earthen hue, and the fever was intense. The intellect was clear, but there was pain extending down the side of the neck, along the course of the jugular vein, and the head was inclined to that side. There was swelling at the base of the neck. In eight days pus appeared in one of the sterno-clavicular articulations. In a few days one knee became involved, and symptoms of pneumonia appeared, which soon subsided. In about seventeen days from the beginning of the phlebitis, swelling and pain occurred over one of the hip-joints, a deep abscess formed, but it was opened early, and the joint did not become involved."

This would have been well met by *Arsenicum*, and I warn you most strongly, should you ever get such a train of symptoms to prescribe for, not to use the lower potencies of *Arsenic*. Give it in very small doses indeed; a small dose of a high potency given every third or fourth hour, will be quite sufficient to conduct the case to recovery; and even then you must keep a sharp look-out for aggravation. The patient's condition is an irritable one in the highest degree, and in making an impression upon it, it would be very easy to overshoot the mark.

## X.

The Affections concomitant with Ear-disease—The Deafness of Eczema and of Hereditary Syphilis—Facial Paralysis, its Pathology and Treatment—Ménière's Disease, its Pathology and Treatment.

IN order to familiarise ourselves with the pathology of acute otitis, and to secure reliable indications for the administration of drugs, it is necessary to be acquainted with the affections to which ear-patients are liable; for so obscure are the indications for ear-remedies that we have often—more often than is usual in the diseases of other portions of the body—to depend almost solely upon the symptoms existing in distant structures for a clue to the specific remedy; we have to rely upon these, supposing the ear symptoms are not sufficiently characteristic, and that there is absence of any obvious prevalent dyscrasia. It is important, for example, to know that Gruber has found in some cases of strumous enlargement of the glands a marked congestion of the labyrinth. And it is also very important to remember “that in much more than half of all the children dying of affections of the lungs and brain, the tympanum, generally on each side, contained pus, and its lining membrane was inflamed and swollen.” Dr. Von Trötsch found the ear normal, says Hinton, in but thirteen cases out of forty-six, and Wreden out of eighty found but fourteen healthy, and this although the membrane was never perforated in Von Trötsch's cases, and only once in Wreden's. You will find at my clinique a number of patients suffering from bronchitis of a chronic

form along with inflammation of the middle ear, and in these patients, I notice, we more often get a purulent otitis than in others; it is in children more than in adults that we see the connection between the two so marked, and the vaginal catarrh of female children is very often found along with the same process in the cavity of the middle ear.

In asthma, too, we often find ear affections, but here the most common aural disability is a deafness due perhaps more to strain upon the tensor tympani muscle and the membrane than to any true inflammation.

We have previously been at pains to warn you to examine the condition of the ears in all cases of severe cerebral disturbance in children; and a like warning holds good and with almost as great force in regard to the lungs. The pneumonia of children is peculiar in being often obscured by a high pyrexial state and delirium, and by the amount of lung-lesion being often very limited and by being frequently confined to the apex (*Sanderson*). This is a complication you may often meet with along with an acute otitis, though it must be confessed that basic rather than apical pneumonia is its usually described accompaniment. The child of one of the most accurate and painstaking physicians I have ever met with died with what was supposed to be meningitis, and it was left for the autopsy to reveal to the attendants an extensive inflammation of one lung. Amongst our accredited remedies for pneumonia with delirium is *Cannabis Sativa*.

Otitis very often accompanies or follows upon eczema of the face, eyelids, scalp, and especially upon an eczema of the auriculo-mastoid fold. In connection with this you will read with great interest a case of long-standing deafness from Carroll Dunham's recently published work, and which was cured with *Mezereum*, the indication being that it had

come on when the young man was a child after an eruption of the scalp characterised by the formation of crusts, beneath which, when pressed, oozed a purulent or semipurulent fluid, and which had been dispersed suddenly by tarry applications. I speak with confidence as to the indication relied upon by Carroll Dunham, as, when he was alive, I had a verbal communication with him on the subject. And you should also read a case of pityriasis of the scalp published by me in the May, 1869, number of the *Monthly Homœopathic Review*, p. 283, as well as a case of eczema with profuse discharge cured by *Bromine* in the September number, 1872.

We have just discharged as cured from the hospital a most obstinate case of deafness, of some months' standing, where parts of the auricles, as well as the auditory canals, were thrown into an eczematous condition. The affliction succeeded a confinement, and after trial with *Rhus Tox.*, *Calcarea Carbonica*, *Croton Tig.*, and *Phosph.*, I directed to be applied to the crusts as they formed a solution of twenty drops of *Liquor Carbonis Detergens* with a drachm each of *Glycerine* and of water. After the third application the eczema disappeared, and along with it the deafness, and, although when seen a week afterwards, dried secretion still filled the meati, the watch-hearing, from being three inches in both ears had risen to the normal, which, with the watch employed, would be about 30 inches, and conversational hearing was as good as ever.

Amongst the many apparent causes of obstinate ear affections that influence the general system must be ranked hereditary syphilis; the deafness that accompanies it is of the most obstinate description, so much so that a recent allopathic writer declares it all but incurable when fairly established. It is for this reason that I draw your attention to *Kreasote* as its remedy. In the *British Journal of Homœopathy*, vol.

xxix. p. 780, I reported such a case cured with *Kreasote* in the third dec. potency, and recently there has been a case attending amongst my ear patients from a deaf-and-dumb institution where decided benefit to an earache accompanying deafness accrued from *Kreasote*. The little fellow attended but twice; the features upon him of hereditary syphilis were fairly marked, and in dependence upon these the *Kreasote* was given. It was Teste who first drew attention to the relationship of *Kreasote* to the hereditary syphilitic dyscrasie of children, and many, amongst whom is Dr. Hughes, stoutly deny its relationship. My experience, although too limited to pronounce an absolute opinion upon its practical utility, is sufficient to justify me in calling your attention to it.

Facial paralysis, or paralysis of the motor division of the seventh pair of nerves, is an affection the pathology of which is intimately connected with the subject of otitis. Nor will you be surprised at this when you carefully examine the position of the aqueduct of Fallopius arching over the cavity of the middle ear, and when you hear that even this thin separating plate of bone that overhangs the promontory is sometimes deficient. Disease of the middle ear is therefore often accompanied by lesion of this nerve, its influence being exerted upon the nerve while within the Fallopian canal. But the nerve may be affected before it reaches the canal, as likewise after it leaves it. Pathologists therefore recognise a facial paralysis arising from causes within the cranial cavity, within the Fallopian canal, and outside of it; but a better division is that of facial paralysis due (i.) to lesion of any part of the nerve-trunk independently of a central cerebral cause, and which is the true Bell's paralysis, and (ii.) that due to a cerebral lesion acting upon the nerve before it reaches the temporal bone, and which is often accompanied by hemiplegia of the limbs of the same side, the *centric facial*

*hemiplegia*, as it is called. A third form exists described as a reflex paralysis due to primary lesion of some portion of the *fifth* pair of nerves, but it is in distinguishing the two former varieties that your attention is to be engaged.

You all know the truly characteristic features of a patient with facial paralysis. We will not attempt to describe them, but will ask you to remember that where the nerve-trunk itself, and not its sources of origin, is affected, the play of the features will be more altered than when the origin is central, for in the one case the voluntary, emotional, and reflex motions, all of which are peculiar to the nerve itself, will be affected, while if the paralysis is of central origin, only certain sets of fibres that take origin from the brain will be involved. The voluntary and emotional actions originating in the cerebrum will suffer in central paralysis, and the reflex actions having their source in the *medulla* will be retained. The patient, therefore, with central paralysis can "shut his eye" perfectly, and the natural involuntary winking is preserved; an absence, therefore, of *complete paralysis of the orbicularis palpebrarum* is indicative of cerebral lesion.

The worst form of the affection is therefore the least alarming to the patient.

Again, in facial paralysis of cerebral origin, the muscles respond normally to electric irritation; but if the nerve-trunk be engaged their contractility is not at all, or scarcely at all, roused by an electric current (*Duchenne*).

Oft-recurring otitis, with facial paralysis as an accompaniment, indicates deficiency in the roof of the middle ear, and consequent exposure of the facial nerve.

An over-sensitiveness to sound, a symptom that comes out in many of our provings, is often due to an affection of the facial nerve. It was present in a case of Bell's paralysis lately under treatment; but as the patient's attention is so

much taken up with the peculiar distortion of the features, this symptom is seldom referred to; you must therefore inquire as to its presence. The duration of an ordinary peripheral facial palsy is generally put down as from ten to twelve months; in the case I refer to it disappeared in a few days under *Mercurius Sol.*, given in the third decimal, and I have noticed a like effect from *Mercurius* where the third nerve was affected. Of course the allopaths often give it as an absorbent; but I believe they often fail to secure its full effects from giving it in too large doses.<sup>1</sup>

While a sensitiveness to sound indicates, very often at all events, involvement of the portio dura of the facial, its opposite, complete absence of any hearing faculty whatever, either aerial or perosseal, is indicative of a paralysed state of the auditory nerve itself—the portio mollis of the seventh.

Hughlings Jackson, in the *British Medical Journal*, March 24th, 1877, says, that “were he to meet with paralysis of one side of the palate in a patient who had also Bell’s paralysis, he should make the diagnosis, not that it depended upon aural disease, but intra-cranial disease; there would be two lesions, and thus there would, if they came on slowly or at different times, be a step towards the diagnosis of the nature of the disease, for two such palsies would point to syphilis.”

Double facial hemiplegia has a like significance; its symmetrical nature would imply a constitutional source as the origin of the mischief—*e.g.*, scrofulosis or syphilis, the periosteum bring most generally involved (*Trousseau*).

From considering paralysis we are naturally brought to the subject of *insanity* and other nerve-affections in connection with aural disease, and when I tell you that upwards of

<sup>1</sup> A case at present under treatment, where the paralysis was ushered in some months ago with violent ear-ache, is making rapid progress under *Merc.-Sol.*



a fourth (*Lebart*) of the cases of cerebral abscess arise in connection with chronic suppurative discharge from the ear, you will be prepared to hear that ear trouble and insanity often go together.

More than this, such a trivial derangement as the presence of cerumen in the meatus, pressing against the drumhead, or even a few epithelial scales lying against it, may produce most unpleasant noises amounting even to hallucinations, the effect produced upon the patient's mental and physical state being out of all proportion to the gravity of the exciting cause. Perhaps there is nothing more calculated to induce confusion of the intellect than the worrying influence of these noises, and the pains taken by patients to describe them would be amusing were the effect of their presence not dangerous. Unfortunately, the influence exerted upon the mind by them is one of the most fruitful causes of suicide.

This department of aural disease has had within recent years a wonderful impulse given it by the researches of the late Monsieur Ménière, Physician to the Deaf and Dumb Institution of Paris, and under the name of "Ménière Disease" is now classed every case of labyrinthine vertigo. His name in connection with it was given in consequence of his having detected after death a bloody exudation in the semicircular canals and the vestibules in the case of a young woman who, while menstruating, had caught cold and had become suddenly deaf; her chief symptoms were vertigo and frequent vomiting.

Just pause for a moment to consider how utterly fatuitous is the teaching of those who would have us depend upon symptoms alone as our guide to treatment, and who, despising pathology, would look upon the tinnitus and vertigo of cerumen as an indication for drug administration equal in importance with a like symptom arising from exuda-

tion within the vestibules. Such men as these are a perfect nuisance in Homœopathy; their absurd declarations bring disgrace upon a glorious revelation in scientific medicine.

By all means let us gain as much insight as we can into the true meaning, the pathological meaning, of every symptom with which we have to deal. This has been our aim throughout, but must be particularly so in connection with this subject of labyrinthine disorder. It is more than probable that the vertigo belonging to the presence of cerumen pressing against the membrane, and that of exudation within the canals, owes its origin, very often, at all events, to increased pressure within the canals, in the one case the effect being brought about through the indirect agency of the ossicular chain, in the other through direct pressure arising from augmentation of intra-vestibular fluid. Now, Cyon has recently found that irritation of each of the semicircular canals is followed by a particular ocular movement—a very significant thing, as Hughlings Jackson remarks, towards the interpretation of auditory vertigo; and Flourens has found marked disorder of motion generally to follow section of these canals.

For the most part, attacks of labyrinthine vertigo occur suddenly. In an obscure case of singing and fulness in the left ear, given by Hinton, Hughlings Jackson elicited that when walking home one day before dinner the patient suddenly felt ill, and said to a friend, "By Jove, I am very giddy;" he could not walk straight; the feeling seemed to affect his legs, "as if the ground were moving;" when he turned his head to look behind he was worse; felt sick on reaching home, relieved by lying down; next morning he was well, but subsequently he had other attacks.

Hinton<sup>1</sup> says that, having got Bader to examine with the

<sup>1</sup> *Op. Cit.* p. 285.

ophthalmoscope, for several months together, every ear case considered "nervous," with few exceptions he found hypermetropia present, and which he considered due to "a certain paralysis of the third nerve."

At p. 262 of his work, Hinton gives a case of recurrent attacks of vertigo and vomiting, impairment of hearing, and unconscious divergence of the eyes, "seeing double" when inattentive.

If a sudden attack of vertigo, with nausea and vomiting, and an inability to walk, be found along with even a slight deafness, and there be a dulness of perception for the vibrations of a tuning-fork placed upon the head, we may diagnose labyrinthine disorder. You will in practice meet with every degree of this labyrinthine derangement, from cases where the symptoms are very imperfectly defined, and are associated with, plainly, the most evanescent or else instable forms of disease, to those in which the most active and rapidly increasing lesion is present; the deafness, too, may be very trivial, or even absent, or, more characteristically still, it may be of the most pronounced variety.

Of remedies, that one that is known to produce labyrinthine derangement with the most pronounced deafness, aerial and perosseal, is *Salicylate of Soda*. In a patient of Dr. Gower's, in the University College Hospital, it produced noises in the head, deafness, and giddiness, a giddiness which was indeterminate as long as she lay still, but very considerable and definite when she raised her head or sat up, and objects seemed to move to the right; the usual connection between the labyrinthine disorder and the muscular adjustment of the eyeball being therefore produced.

Next to *Salicylate of Soda* comes *Quinine*, which produces not alone nervous, but, as well, inflammatory ear-symptoms. In a case mentioned by Roosa the patient began taking

15-gr. doses of *Quinine* for malarial neuralgia; then came earache, returning each time he went back to the *Quinine*. This was succeeded by noises so great as to exclude all other sounds; but, poor fellow, although a doctor, he seems to have supposed, with many others of his cloth, that there was no remedy for neuralgia but *Quinine*, so he went back to it; and the otitis that supervened was of so severe a character as to place the doctor in a very depressed condition, and when he recovered from this and his neuralgia, which he did simultaneously, he was "a perfect wreck." And upon the eyes *Quinine* produces a visible hyperæmia of the retina, which subsides, leaving behind a dulness of vision without perceptible structural change, and a (ii.) diplopia from disorder of the muscles (Dr. S. Reynolds, *New York Medical and Surgical Reporter*). So that you see the aural lesion and deranged adjustment of the eye are found in association both as a drug-effect and a disease-effect, and so characteristically that I would advise you, in the presence of these combined neuroses, to use very minute doses of either remedy, or most probably aggravation will result. You will find (at least, it accords with my experience) that a trituration of *Quinine* will act much more satisfactorily than any form of solution, and the grand indication for it will be a history of more or less prolonged fatigue, of either body or mind, leading to general prostration of the system, weakness of digestion, and a wide-spread nervous derangement. A powder of the second or third trituration of *Quinine* will in such cases do wonders.

Stopping short of manifest labyrinthine disorder, and yet producing many of the symptoms we have been discussing, comes *Conium Maculatum*. "Three-quarters of an hour after taking five drachms and a half of the *Succus Conii*," writes Harley, "on raising my eyes from the object upon which they had been fixed to a more distant one, the vision was

confused, and a feeling of giddiness suddenly came over me. That these symptoms were due to an impairment of power in the muscular apparatus employed in the adaptation of the eye was obvious to me; for, so long as my eyes were fixed on a given object, the giddiness disappeared, and the definition and capacity of vision for the minutest objects were unimpaired. But the instant that I directed the eyes to another object all was haze and confusion, and I felt giddy; and, in order to recover my vision and dismiss the sense of giddiness, it was necessary to lay hold upon some object, as it were, with my eyes, and rest them securely upon it." This giddiness is succeeded in *Conium* poisoning by a complete loss of muscular power throughout the body.

In Harley's provings there is no evidence of labyrinthine mischief by *Conium*; but Hahnemann's symptom, "*vertigo, as if he were turning in a circle, when rising from his seat*," is symptomatic of Ménière's disease, and has been cured by it.

The *Cicuta* poisonings—and you know allopathy confounds these drugs together—give us decided combined ear and eye symptoms. In one of the provers, "*objects were seen double, and they looked black; at times she became hard of hearing*;" in another, along with "horrible convulsive movements, the eyes were turned up in an extraordinary manner, and blood was discharged from the ears."

In vol. xxix. of the *British Journal of Homœopathy* I published a case of hypermetropia in a young girl where there was a pulling sensation in the orbit as from the muscles of the eyeball, and which was cured with *Conium*.

*Conium* symptoms are referable to a want of nutrition in the brain—absolute anæmia, or at most trivial venous congestion, being the *post-mortem* appearance; it has no spinal symptoms, and it does not, to any great extent, derange the reasoning faculties. *Cicuta* has cerebral symptoms like those

of *Conium*, with the addition of profound spinal disturbance, its spasms being painless; while, lastly, the *Enanthe Crocata*, a nearly allied plant, the water-dropwort, adds to the spinal and cerebral symptoms of these, profound disturbance of the intellectual faculties, mania, *delirium tremens*, and most painful spasms.

Gentlemen, we are now in the midst of an inquiry which is of the utmost importance to us, not alone in our endeavour to obtain a correct idea of the pathology and scientific treatment of ear disease, but also in assisting us to appreciate the true significance of the symptoms developed in our provings.

Take up what department of medicine we may, there is none that promises to throw more light upon hitherto obscure cerebral symptoms than this of aural nerve disorder. The whole subject is one that has long been shrouded in obscurity; and while it seems a pity not to call your attention to the many interesting points in connection with it, yet the field is so extensive as to justify our entering upon only a very curtailed consideration of it in a course of lectures devoted principally to the subject of Inflammation of the Ear.

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## XI.

Chronic Inflammation of the Ear—The Catarrhal and Proliferous Forms—  
Diagnosis by means of Air-Douche and Tuning-Fork.

I do not suppose there is any symptom that bewilders a student of our provings when he betakes himself to a study of Homœopathy more than this of noises in the ears with its countless variations. Since I commenced this course of lectures I have not felt myself placed in anything like the difficult position I am at present. As I said, I should like very much to enter at some length into this branch of our subject, but fear that in doing so I might weary your patience, and hope that after all it may be sufficient to revert to it in Clinical Lectures which I trust we may from time to time be able to deliver.

We pass on now to consider more especially Chronic Inflammation of the ear; and we must begin by saying that of this form of the affection there are two varieties, the Catarrhal, and what is called the Proliferous, but which was described by Toynbee as thickening and rigidity of the mucous membrane.

The catarrhal form of inflammation has been very often referred to; in fact, catarrh is now so generally recognised as the pathological process inducing aural disease, that in allopathic institutions it is no longer the fashion to speak of deafness, but rather to term all cases of uncomplicated deafness, aural catarrh; and should otorrhœa exist, to term the case purulent catarrh. This sounds scientific, but it really is not

so. However tedious it may be, if you want to individualise each case, and apply, as you should, a separate treatment to it, you must pay the greatest possible attention to the symptom deafness, and its most interesting varieties, knowing, as well you must, that though catarrh may be present in each case, the differences between each are very marked, and that there are, in fact, almost as many kinds of disease-force leading on to this catarrh as there are cases of deafness, and that each of these disease forces requires a separate remedy for its removal. Therefore, although it is absolutely necessary to know if catarrh be present in the ear, I would recommend you in studying these cases not to hurry into a diagnosis of the nature of the lesion, but before doing so to study every symptom of which the patient complains, and to make a thorough local examination; and then, but not till then, you may pronounce upon its nature—whether Catarrhal or Proliferous. Nothing is more ridiculed by allopaths than our prescribing for symptoms. They pronounce it unscientific and indicative of ignorance; but allow me, by way of example, to suppose a case of deafness where the patient hears better when in a noise. Will this be best treated by assuming, with Kramer, that it arises from auditory-nerve torpor, the nerve getting excited by the noises; with Allen, that it arises from a relaxed condition of the drumhead; or with Hinton, that it originates in a disconnection between the incus and stapes; or with all of them, that it is primarily the result of catarrh? All this, so far as the treatment of the case is concerned, is nothing more than tall talk; but when we take up our “Chronic Diseases,” and show you, under the head of *Graphites*, “*Improvement of hearing when riding in a carriage*,” and when we demonstrate to you that this pathogenetic effect can be utilised for curative purposes, we are, clearly, in a different



position altogether. The fact that catarrh exists, then, sinks into insignificance. It is, comparatively, useless as an indication, whilst the kind of deafness produced by the catarrh becomes a valuable indication for treatment, as it points to the specific remedy.

It is not only desirable, but, for the proper understanding of the case, is absolutely necessary to know that catarrh exists. So much is aimed at by both sections of the profession; but it is additionally desirable and even more necessary to find a something which, this catarrh being present, will lead us to the indicated, the affiliated remedy. This is sought for and successfully obtained by Homœopathy and by the homœopathic method alone, and so it is in every case; *ex uno disce omnes*. You see, therefore, how ridiculous it is to suppose that as Homœopaths we belong to a distinct and antagonistic branch of the profession. Nothing of the kind. We take in all that allopathy does, while to this we add a scientific system of treatment.

You will not ask me to describe for you catarrhal deafness; you are already aware that it begins by "taking cold." A succession of colds in the head is very often followed by a confirmed deafness; in fact, to a great extent, the history of the case determines the nature of the pathological lesion, and, as we shall see, distinguishes it from the proliferous form; but, as you know, catarrhal deafness may also arise as a sequela of acute aural inflammation, and thus be caused by smallpox, scarlatina, and other exanthemata. The usual forms of catarrhal deafness, therefore, come on as colds do, intermittingly; the patient gets better and worse until at last he becomes a martyr to confirmed deafness. Should a severe form of deafness come on suddenly from cold, bathing in cold water, or being out in the evening air, and without much pain, but with noises in one or both ears, the pro-

bability will be that on examination you will discover the meatus plugged with cerumen, its presence indicating a catarrhal condition quite as much as would any other sign.

Should deafness arise from recurrent catarrhs, you must, in selecting your remedy, place great dependence upon this fact alone. *Iodium*, and its salt, *Kali Hydriodicum*, will here help you, and particularly so in young patients. Then you will have *Mercurius*, *Cubebæ*, *Cepa*, and other remedies; but especially will it be necessary for you to endeavour to prevent the recurrence of these colds, and there is no one remedy that so effectually does this as *Camphor*, especially when administered in inhalation form. I am in the habit of placing in the hands of patients who suffer from catarrhal deafness a leaflet containing these "Directions for Inhaling *Camphor*:"

"Procure from a reliable homœopathic chemist a shilling bottle of Rubini's *Spirits of Camphor*; pour a few drops upon the palm of one hand, rub your hands together, and then, holding them over your nose, draw in through your nose a deep breath.

"This done, close both nostrils tightly between your finger and thumb, and press up the air in your mouth through the ear-tubes, as though you were trying 'to blow through your ears.'

"Do this three or four times in rapid succession at each sitting, and repeat the operation two or three times a day."

#### THE PROLIFEROUS INFLAMMATION.

The diagnosis of Proliferous as distinguished from Catarrhal Inflammation is mainly dependent, during life, upon the evidence of symptoms only—upon, in fact, an inquiry into the history of the case. There is no history of colds; the throat

is not inflamed, and "the membrane is generally whitish and shining, sometimes of normal curvature, sometimes seeming flat." The hearing becomes gradually and progressively impaired, tinnitus generally marking the onset and continuation of the disease, and, as a rule, there is an absence of pain (*Hinton*). That symptom we just referred to, the hearing better in a noise, is said to be more characteristic of this than of catarrhal inflammations. In truth, however, the catarrhal and proliferous inflammations are generally found together, the one merging into the other, and it is seldom we can pronounce a case to be one of proliferous inflammation only.

"This form of inflammation shows," says Roosa, "a higher formation than the catarrhal; there are changes which may have resulted directly from the increase of secretion. But the stage of catarrh having completely passed over, or, in some cases, never having existed, these pathological appearances may be truly classed together as evidences of what," continues Roosa, "I have ventured to designate the proliferous form. They are—

"1. Connective tissue formations in the cavity of the tympanum.

"2. The mucous membrane of the tube (Eustachian) covered by dense fibrous tissue.

"3. Hypertrophy of the bone walls of the tube.

"4. Obstruction of the tube and cavity of the tympanum by dense fibrous tissue.

"5. The stapes bone completely and firmly ankylosed to the margin of the fenestra ovalis.

"6. An exostosis of the inner surface of the neck of the malleus.

"7. Malleus and incus firmly ankylosed together.

"8. Firm bands of adhesions in the mastoid cells.

"9. False membrane on the tendon of the tensor tympani muscle.

"10. Partial obliteration of the cavity of the tympanum from adhesions of the membrana tympani to the labyrinth wall (the promontory generally).

"11. Hyperostosis of the petrous bone and ankylosis of both stapes.

"12. Atrophy and fatty degeneration of the tensor tympani."

The process, however, by which these alarming pathological lesions are induced is, in reality, a slow form of inflammation, a hyperæmia, leading to a hyperplasia of tissue elements, and so of the formation of connective threads, membranes, and polypi in the middle ear and other parts, and, when going on to retrograde metamorphosis, to disintegration, absorption, fatty and calcareous degeneration of tissue. But, in truth, an impediment of any description to the flow of blood through a part will occasion the greater number of these evils, and such we know a catarrhal change would be; so that, so far as some cases are concerned, I can hardly see any necessity for assuming the existence of a proliferous, as absolutely distinguishable from a catarrhal, form of inflammation. Still, in estimating the curability of any given case, it is very necessary to know whether there is present a condition of existing catarrh or a lesion such as has resulted from a pre-existent catarrhal condition. We cannot be too painstaking in our inquiries into the nature of the case, nor too discriminating in our selection of the allied drug. Then, in considering any case, you should take into account whether one or both ears were affected. A true catarrh, more particularly catarrh in the chronic form, will perhaps more generally affect both ears. A proliferous inflammation, so far as my own observations go, is very often found to

engage but one ear; and if it engage both ears it will be just possible, but by no means necessarily so, that any degeneration going on will principally affect the coats of the small arterial twigs, and therefore the circulation through the ears.

Acute inflammation very often fixes itself upon one ear only. An abscess forms; and it is surely a misnomer to term this otitis and its resulting discharge a catarrh. However, as catarrh is a condition to be found along with the most diverse ailments, the application of this term is very widespread; and as acute inflammation is very often, as explained in previous lectures, followed by a catarrhal condition of the mucous surfaces, we may rest content; only you would not say the immediate discharge that flows from a rectal abscess was indicative of a catarrhal condition of the rectum—why, then, that from an abscess in the ear?

Where chronic purulent discharge from the ear exists you must always be careful to examine the urine, as albuminuria is very frequently present.

We will now enter into the explanation of our aids to diagnosis in obscure ear-cases, and first, of *Diagnosis by means of the Air-Douche*. You have seen me, while the patient was in the act of swallowing a sip of water, take advantage, as first proposed by Politzer, of the then patulous condition of the throat openings of the Eustachian tubes, to send a current of air from an india-rubber bag along the floor of either nostril, that it may thus reach the interior of the tubes, and so gain admission to the middle ear.

Now such an admission of air is in some cases followed by relief, in certain cases so decidedly as to prove then and there an absolutely curative proceeding; in others, on the contrary, no relief whatever follows; while, again, in others absolute aggravation ensues. And you have seen, too, that I have

noted carefully what effect such a proceeding has upon the patient's sensations. And this has been the reason: if air from your bag passes easily into the middle ear—and this you determine, firstly, by the patient's own sensations, and, secondly, by the sound heard upon its arrival in the tympanal cavity by your ear, unaided, or else aided by a tube, called sometimes an otoscope, but more properly a diagnostic tube, which passes from the ear of the patient to your own, and in this way conveys the well-known "click," in proof that air has been forced against the tympanal membrane,—well, if the air passes in all right, you infer that the Eustachian tube is free; if it does not so pass, that obstruction exists.

Now, if relief to deafness follow such admission of air, you infer a resiliency of the structures of the middle ear. For why? I will give you the explanation, with some verbal alteration, from Allen. The chain of bones is fastened at one end to the drumhead by means of the handle of the malleus, and at the other end to the membrane of the fenestra ovalis by means of the foot of the stapes, which in this way presses against the labyrinth fluid, the perilymph. Every inward pressure of the external membrane must therefore simultaneously thrust inwards the stapes, which will so influence the labyrinth fluid as to cause a corresponding thrusting outwards of the membrane of the fenestra rotunda. This compensation movement takes place from the effect of the impulse against the fenestra ovalis membrane, limited by the unyielding bony canal-walls, being converged to the other extremity of this canal; in other words, to the membrane of the fenestra rotunda. If from any cause the stapes cannot be moved freely upon its oval opening, no corresponding stretching or relaxation of the membrane at the round opening can occur; and if, in such a case, air be forcibly

blown into the drum through the Eustachian tube without pushing outwards the membrana tympani, the whole ossicular chain will remain immovable, and the labyrinth fluid at the oval opening will be uninfluenced by any withdrawal of the stapes. Very different, however, is the result upon the delicate membrane at the other end of the labyrinth, the round cochlear opening. The pressure of the condensed air is here very great, and may sometimes cause most unpleasant giddiness. Now it is plain that adhesions of the membrana tympani to the walls of the tympanic cavity, or anchylosis of the stapes to the fenestra ovalis, will most materially restrict the excursive power of the drumhead, if not altogether hinder it; and consequently no relaxation of the fenestra rotunda membrane can be effected; it remains inelastic and invibratile, and no improvement to the hearing can be anticipated while it so continues. Should, however, these adhesions, and the rigidity of the ossicular chain be broken up by the repeated and carefully regulated introduction of streams of air, the lost mobility of the membrane of the fenestra rotunda will be restored, and deafness, so far as it depended thereupon, cured.

This method of Politzer's, besides being a curative proceeding, explains and helps towards the proper elucidation of many cases. Let us turn to another matter, *Diagnosis by means of the Tuning-Fork*. The value of this as an instrument for diagnosis depends upon the fact, that if you place a tuning-fork in a state of vibration upon the head, and then place in your own ear a piece of india-rubber tubing, branching off in such a way that both the tubes coming off from it will enter both auditory canals of the person under examination, you will find that not only will the vibrations reach you more distinctly when coming by way of his ears than if the ends of the tubes were placed upon any other part of the

head, but also that defect in the conducting media of the ear may occasion a corresponding diminution in the force of the sound. And so, if the auditory nerve be unaffected, and a person closes his ears while the tuning-fork is applied to his head, the vibrations will be intensified by this closure, in consequence of a return of the vibrations upon the internal parts of the organ. Precisely the same holds good of the voice. Close your ears and speak, the sound of your voice is now confined to your head, its distribution being limited by the closure of its natural outlet, the external auditory canal. We infer, therefore, that the ear is healthy if the vibrations be intensified by closure. The auditory nerve, at least, is all right. If this phenomenon occurs in a very deaf person—that is to say, if when the meatus is not closed the tuning-fork is heard loudest in the deaf ear—you infer interference with the conducting apparatus, a loss of the small bones, for example.

In some ear diseases closure of the meatus produces a diminution of vibration. Hinton says of this,<sup>1</sup> “It is my belief that this symptom is demonstrative of a disease of the nervous apparatus,” or, as he intimates in a foot-note, increased tension within the labyrinth. “It seems,” says he, “impossible to refer it to any condition of the conducting media.” Now the natural effect of pressure on the meatus—increase of sound—and this inverse effect of diminished sound, are by no means incompatible with each other, inasmuch as they arise in independent ways and are due to an action exerted on different parts of the organ. And it is, of course, possible that cases might arise in which they might just neutralise each other—the diminished hearing balancing the increase of sound. And in these cases closure

<sup>1</sup> Supplement to Toynbee, “Diseases of the Ear,” p. 427.



of the meatus might leave the sound unaffected in intensity, although the conducting media were normal.

"It is well in examining cases," says Hinton, "to see whether the tuning-fork be heard well or ill, whether better in one or other ear, and what the effect is of gently pressing the tragus backwards over the meatus."

However, we meet with the most surprising differences in regard to the capacities patients and even persons in health manifest with regard to their power of distinguishing the vibrations of a tuning-fork placed upon the head—*perosseal hearing*, as it is called, in contradistinction to *aerial hearing*, the faculty for perceiving vibrations communicated through the air. Some persons with acute conversational hearing are unable to distinguish the sound of a tuning-fork placed upon the centre of the head. And indeed, before pronouncing a patient to be absolutely bereft of hearing powers, you should test the condition of the auditory nerve by transmitting the vibrations through the teeth, choosing for this purpose a tooth of the lower jaw, against which you place the vibrating tuning-fork.

## XII.

Ear Instruments—The Ear Speculum and the Author's Modification of it—Brunton's Auriscope—The Eustachian Catheter—Syringing the Ear, and the Removal of Foreign Bodies.

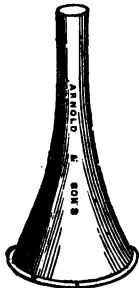
THE Politzer bag and the tuning-fork are instruments of quite recent introduction among those employed by the aurist, and very useful ones they are too. The Air Douche, as the Politzer-bag inflation is sometimes termed, is, as we have seen, extremely useful both as a remedial and a diagnostic procedure, while as an instrument of diagnosis alone can the tuning-fork be held in estimation. By means of it you will often be able to tell, before the ordinary hearing faculty has been restored, what measure of progress the patient makes. For example, there is a patient now attending in whom the tuning-fork could be heard only through the teeth on first coming under treatment, and in whom, after a gradual improvement, there is now a clear perception of its slightest vibration placed upon any part of the head. Thus we are enabled to mark and measure progress, not by what in such cases would necessarily be the unreliable conviction of friends, but by the much less delusory test of practical experiment. Again, you will find the tuning-fork of great use—and I believe myself to be the first in now suggesting its application to such purpose—in helping to determine any threatening of Meningitis in children, for when irritation has spread from the periosteum of the middle ear to that of the cranial bones or to the membranes of the brain, an intense pain will be occasioned by placing a

tuning-fork, vibrating ever so feebly, upon any part of the head; the little patients are perfectly unable to endure it; and, so far as my experience has gone, this obtains mostly in cases threatened by inflammatory mischief within the skull. The sudden withdrawal of the head, especially when this action is accompanied by an expression of pain, whenever the tuning-fork is placed vibrating upon it, constitutes in children an indication of cerebral involvement; but—and here is the caution—the very sight of an instrument of any description will sometimes occasion extreme nervousness in some patients, as will its contact with the scalp; hence, for this to be a criterion of moment, we must satisfy ourselves that pain is really felt and not merely imagined.

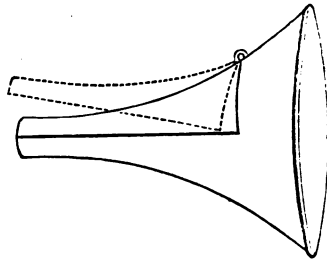
### *The Ear-Speculum.*

We have already given hints as to the making a sufficient examination of the condition of the membrana tympani; we must now enter a little more into detail upon the same subject. Compared with the eye, the difficulty in examining the ear is this—that in the natural condition of the parts it is impossible to throw an unobstructed stream of light in upon the membrane. We have, in order to obliterate the folds into which the cartilage of the auditory canal and that of the auricle is thrown, to pass in a tube whose unresisting sides will overcome any obstruction the cartilage may offer; for, be it remembered, so far as the osseous constituent of the auditory canal is concerned, there is no obstruction whatever—as any one can see who examines a temporal bone in the dry state—to the entrance of light: it is—of course we speak of the great majority of cases—the cartilage, and the cartilage only, that opposes an obstruction. The canal being wholly surrounded by bone, it will follow that an attempt at dilating

it is out of the question, and hence the dilating speculum of Kramer and of Yearsley is admittedly an inferior instrument. The bone cannot be dilated, and all that is needful for a proper view of the membrane is to obliterate the folds of cartilage in a way that will not obstruct the entrance of light. This is usually accomplished by means of the speculum of Gruber or Wilde, or that of Toynbee, which is a modification of Gruber's. But in improving upon Kramer's speculum, Gruber, and all who have followed him, neglected to take into consideration one important feature of the Kramer speculum, and this is, the ease with which it can be cleansed from the cerumen and purulent discharge with which ear specula are continually becoming clogged. I have, therefore, in the speculum here portrayed, and which has been described by me in the *British Medical Journal* and in the *Medical Times and Gazette*, combined the advantages of both



TOYNBEE'S.



COOPER'S.

the Kramer and Gruber speculum without the disadvantages of either. This speculum of mine, while equally efficient with any for pushing aside the obstructing cartilage, is superior to all modern ones in the possession of a door working upon a hinge, and which allows of the easy and thorough cleansing of the instrument. And besides, this door working upon a hinge at a distance from the distal extremity of the

instrument, allows of a certain measure of up-and-down hitching while the instrument is being used, thereby enabling us to get a view of portions of the membrane that would otherwise be obscured, or, at all events, less easily visible; and then in inserting a cotton wool plug, this speculum, as it allows of expansion, is more available than the usual forms.

This modification in the ordinary Toynbee speculum of a door opening and shutting at the side is, therefore, in every way advantageous. I had, perhaps, better mention that the wide portion of my speculum is rather more expanded than that of the true Toynbee speculum; this is for the purpose of admitting of a clearer illumination, though it is not an essential modification.

In examining a patient, the surgeon should fix upon his forehead an ordinary laryngoscopic mirror, or one of shorter focus made for the purpose of aural requirements; then, if behind and on a level with the patient's ear there be placed, alight, an ordinary composite candle, we shall be in a position to obtain a full and defined image of the membrana tympani. I prefer using the naked flame of a candle or of a gas jet to employing lenses in front of or mirrors behind the flame. The use of the small candlelight enables you to focus the rays of light upon a circumscribed space, and to direct the light through the narrow canal of your speculum with greater ease and with less obscurity than if you were dependent upon rays twice reflected.

Some practitioners prefer Brunton's auriscope to any other speculum. The Brunton speculum is an ordinary Toynbee attached to which is a cylinder constructed so as to admit the rays of light and reflect them magnified along the canal of the instrument. For general use I prefer the forehead mirror and ordinary ear speculum, as I believe its use to be less trying to the surgeon's sight, and besides, the image ob-

tained is a natural and not a magnified one; but where uncertainty exists as to the nature of the objects seen—small spots on the membrane, adhesions with the promontory, minute perforations, and such like—the Brunton mechanism is, in all contempt of question, preferable to any other.



BRUNTON'S AURISCOPE.

London practitioners are invariably in the habit of depending upon artificial light for purposes of illumination; this is condemned by some of the German aurists, particularly by **Kramer**, who, with his usual severely vigorous criticism, inveighs against it. However, our Continental friends should come to London in a November fog, and the indispensable necessity for artificial illumination would be at once apparent; in fact, the practice of an aurist would be most unsatisfactory in London were it not for the use of artificial light. It is one of the great advantages of Brunton's speculum that either daylight or an artificial illumination can be employed.

**Kramer's** advocacy of his now antiquated speculum is very amusing. Thus he tells us<sup>1</sup> that "any defects it may appear to possess when in use result simply *from a want of dexterity*

<sup>1</sup> "Aural Surgery." New Sydenham Society's Translation. 1863.

*upon the part of the operator*”! a mode of argument that inferior inventors would do well to adopt; while he fails to insist upon its really great advantage, that the interior of it can be easily cleansed.

If the speculum as modified by the author by the addition of a door, as figured at p. 135, be constructed to fit upon Brunton's apparatus, the auriscope will be rendered a much more perfect instrument.

### *The Eustachian Catheter.*

The Eustachian tube is, unlike the urethra, very seldom the seat of an organic stricture; though quite as liable, perhaps more liable, to chronic and acute catarrhal inflammation, the inflammatory process does not deposit around the walls of this tube the fibrous material we find to surround, and thus induce contraction of, the sides of the urethra. And, besides, the disposition of the muscles bordering upon and engaged in performing the office of expansion and contraction of this tube, is such as precludes the same liability to spasm we meet with in a canal kept patulous by a muscular arrangement so elaborate and so highly complicate as that of the urethra. Hence we do not meet with the spasmodic strictures in the Eustachian tube that are so common in the urethra. And were we to proceed to catheterism of the Eustachian tube with the same objects in view as we generally have when proceeding to perform this operation upon the urethra, we would undoubtedly be entering upon a most dangerous operation; for the sides of this tube are so constructed as to render the exhibition of even the least force wholly unjustifiable. Then, let it ever be remembered, it is not a spasmodic nor any firm organic contraction of the Eustachian tube with which we have to deal; what is present and what calls for catheterism

in this tube is simply and solely its catarrhal condition, which has led to the collection of mucus, and the relaxation and slight swelling of the sides of the tube.

Syphilis as well as diphtheria may be attended with cicatricial contraction of the parts bordering upon the Eustachian tube, and hence these may induce stricture, or even complete obliteration of the tube, but for such lesions the Eustachian catheter holds out no hope of relief. The attempt to employ it in cases such as these, where organic impediments have to be overcome, would be attended with the gravest danger; and it is, I suppose, the employment of it in these unsuitable cases that caused Toynbee to hold it in such slight esteem.

Any way, if used in appropriate cases the catheter is a useful, and, indeed, an indispensable instrument for improving the hearing powers, and therefore it is very necessary that any one who aspires to the successful treatment of chronic aural disease should become skilled in its application.

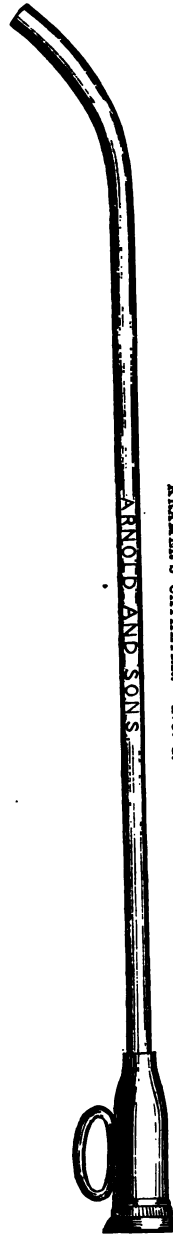
Our advice to those desirous of acquiring facility in passing the catheter would be to practise it in the first place upon the dead body, as this will familiarise them with the construction of the parts engaged; and having done this, let them then carefully read over Kramer's directions for using the catheter. They are as follows:—

“As a rule,” says he, “the catheterism of the Eustachian tube should be accomplished with one of the catheters 1—4,<sup>1</sup> introduced through the corresponding nasal meatus of the ear that is to be examined. For this purpose the patient, if an adult, is to be placed upon a chair with a common back, or with one somewhat higher than usual, in order that the head may be supported. Children between the ages of

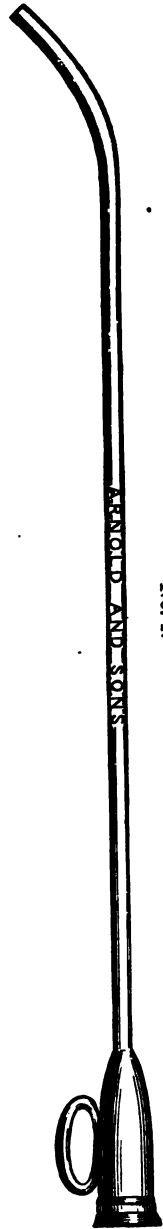
<sup>1</sup> Kramer uses four sizes of catheters.



KRAMER'S CATWHEEL.—No. 4.



No. 1.



eight and fourteen should be placed with their back against a grown-up person, who may support them, or, if reliance can be placed on their steadiness, against a wall, a table, etc. Younger children should be taken on the lap of an intelligent person, against whose breast they can lean their heads.<sup>1</sup> This person should keep the legs of the child between his thighs and hold his hands, while the head of the child is fixed by the left hand of the surgeon. These measures are very necessary, as children are often restless and unruly.

"After the patient has blown his nose (partly for the purpose of clearing away a too abundant secretion, partly, in case the nose is too dry, to moisten it, and thus enable the instrument to slide along it with greater facility), we dip the catheter into pure olive oil, and blow through it to assure ourselves of its permeability. The head of the patient is then fixed with the left hand; the catheter is held with the thumb and finger of the right hand close to the funnel-shaped extremity, in such a manner that the ring attached is turned downward; the beak is placed in the nasal meatus, resting upon its floor, close to the septum, with the convexity upwards. From this point it is pushed backwards with a very light hand, sweeping as much as possible along the floor of the nostril, with continual elevation of the handle, till the instrument becomes horizontal and its extremity rests against the posterior wall of the pharynx. The thicker the catheter, the more easily are these movements executed, etc."

"Irregularities in the form of the inferior turbinate bone and strong lateral displacement of the septum may render the first introduction of the catheter very difficult, and test

<sup>1</sup> Since the introduction of the Politzer bag the catheter is hardly ever used in the case of children. Kramer, however, will have nothing to do with Politzer or his bag.

severely the delicacy of the sense of touch in the hand of the operator. As the point of the beak arrives at the posterior wall of the pharynx, the funnel-shaped end of the catheter is to be raised a little above the horizontal line, and at the same time to be lightly withdrawn. The beak then sinks, and rests upon the posterior wall of the soft palate, which at that instant contracts, performs a swallowing movement, raises itself, and when assisted by a quarter turn upon its axis from within outwards, lifts the beak of the instrument into the tube.

“ If this rapid movement is not successful in the hands of an inexperienced person, the beak of the catheter must be conducted back to the upper part of the pharynx, in order that it may be slowly drawn forwards and turned at the same time laterally a quarter turn upon its axis towards the outside, by which means the ring upon the funnel-shaped end is directed horizontally. It now slides over and into the swelling of the tube itself, where the beak of the catheter is directed, with its concavity against the anterior swelling of the tube, and here it hooks into it, and can be clearly felt to be grasped by it upon quickly withdrawing it. The catheter lies here quite conveniently, being in no way a source of annoyance to the patient, even in speaking, in swallowing, or in any of the movements of the head. For the sake of security we now elevate the beak of the catheter above the horizontal line, directing it upward and outward, the position of the beak being determined and rendered evident by the direction of the ring upon the funnel-shaped end.”

Aurists use, in addition to the silver catheter, catgut or laminaria bougies. These are particularly required where constriction exists in the canal, rendering it impracticable to pass the catheter; and then, the catheter being passed as far

as the seat of constriction, and which is generally at the junction of the cartilaginous with the bony portion of the tube, the bougie guided down the tube of the catheter is forced onwards by the surgeon and allowed to remain in the tube for fifteen or twenty minutes, during which time it swells, and so allows of withdrawal of the catheter (*Hinton*). Sometimes portions of bougie remain behind, but without causing anything beyond temporary inconvenience to the patient, and often, in effecting an exit, resulting in positive improvement by inducing a dilatation of the canal.

Dr. Alexander Morison, of Canonbury, suggests the addition of a register to the Eustachian catheter, such as will indicate the angle at which the throat orifice of the tube lies in any



MORISON'S REGISTERING CATHETER.

given case, and which being noted will be available at future visits, thus saving time.

### *Syringing the Ear.*

The operation of syringing the ear must now engage our attention, and simple as it is, there is much detail to be insisted upon connected with its proper performance. The purposes for which we find it necessary to resort to the employment of the syringe are these. Firstly, as a means of cleansing the auditory canal, and removing purulent discharge or flakes of epidermis, an object that is attainable by the use of almost any small syringe sending forward a gentle stream of luke-warm water. In certain cases this has to be done very frequently, and often by the patient himself.

Secondly, as a means of removing a collection of hardened cerumen firmly attaching itself to the sides of and completely blocking up the meatus, and in which case we require to employ considerable force and to use a good-sized and specially-constructed instrument, in order to detach the ceruminous mass from its surroundings. In no case has this to be done frequently, and never ought to be attempted by a patient, however well-instructed he may be. The pathological difference between the two cases is this, that in the first the tympanic membrane is exposed, and it may be even perforated, and therefore to direct a forcible stream of water against it would be in the highest degree reprehensible; the simple admission of a sufficient quantity of water into the ear, which can be effected by a properly-instructed patient, being all that is required to accomplish the desired object. There is a third purpose we may have in view, but we shall consider the general operation of syringing before we come to dwell upon it. Before proceeding to syringe an ear, you should see that the patient is in a good light, and then, taking hold of the auricle between the finger and thumb of the left hand and pulling it well backwards and upwards, having first ejected a little of the water against it in order to determine if the temperature be agreeable, insert half an inch of the pipe of the syringe into the meatus, and, managing your instrument with the right hand, use some slight pressure against the back wall of the meatus with the further extremity of the syringe-pipe, which is to be directed horizontally inwards; this done, you are in a position to proceed to work the piston, and which, if, as we said, the material to be removed be cerumen, but in no other case, may be done with some force. As a prevention against slopping, you must be careful that the patient holds below the ear, and well presses in behind the angle of the lower

jaw, a good-sized tumbler half full of lukewarm water, from which source you can obtain your supply each time the syringe requires filling; and as an additional protection you must tuck in a towel round the neck. The accompanying illustration shows at a glance how it is to be performed.



Such is the most general way of syringing an ear, and for ordinary purposes it is, perhaps, the most practicable.

But there is, as we said, a third purpose for which we resort to syringing, and this is for the removal of foreign bodies from the meatus. It is true that a mass of cerumen wedged in the meatus is generally regarded as being tantamount to a foreign body, and requiring the display of equal skill in effecting its dislodgment; still it is both possible and practically advantageous to make a distinction between an ordinary foreign body and a ceruminous collection, as we have done in the following article extracted from the

*Medical Press and Circular*, June 12, 1878, and which I believe lays down the true principles upon which the operation of syringing an ear for the purpose of removal of cerumen, as contrasted with foreign bodies, ought to be conducted.

#### THE REMOVAL OF FOREIGN BODIES FROM THE EAR.

The many recent communications upon this subject in the journals show how much interest is being taken on the subject of aural therapeutics. The lesson we learn from one and all of them is, it seems to me, the important one summarised by Hinton ("Aural Surgery," p. 73), when he says, "that whenever an instrument will succeed" (in removing a foreign body from the meatus) "syringing would also succeed, and that when proper syringing will not succeed all instruments are full of danger."

This being the case, it is very necessary, if improvement is to be effected, that it be done in relation to our methods of performing the operation of syringing.

Now, practically, there are two very different kinds of foreign bodies to be met with in the external auditory meatus: these are, in the first place, *cerumen*, which is to all intents and purposes a foreign body, and, in the second place, substances such as beads, buttons, and the stones of fruit, etc., that are introduced from without.

In the case of both varieties, it must be admitted to be of extreme importance the being able to *see* the body upon which we are directing the current of water from the syringe. With the ordinary ear specula, as met with at the instrument-makers, this would be impracticable. I have, therefore, constructed an ear speculum, a description of which appeared in the April (1877) number of the *Dublin Journal of Medical Science*, so constituted by the addition of a spout-handle through which the outgoing current of water can pass, as to

enable us to see at each stage of the operation in what way the foreign body is influenced, and upon what part of it we are directing the principal force.

The case of cerumen, however, differs from that of an ordinary foreign body in this most important particular, that force from *in front* is necessary to be expended in order to detach it from the sides of the meatus, and that in order to accomplish this, the force obtained by means of the jet of water playing upon it has often to be considerable; while, on the contrary, in the case of the true foreign body, no *vis à fronte* is required, and may even be highly dangerous by driving its perhaps irritating surface against the tympanal membrane. In this respect cerumen stands in marked contrast from the ordinary foreign body, the one offering little or no danger to the application of force by means of an ordinary syringe-stream, and even requiring its application, the other circumstanced so as neither to require nor yet to be free from danger if a forcible syringe-stream be directed upon it. For here comes the distinction between the two: the cerumen invariably occupies the entire channel of the meatus, it is firmly attached to the sides of the meatus, and its tympanal extremity is smooth; the foreign body, contrariwise, scarcely ever occupies—except, indeed, the meatus be very much swollen—the entire calibre of the canal, its sides do not adhere to the wall of the meatus, and its inner or tympanal extremity is often rough and irritating.

This being the case, while we are justified in playing the syringe-stream with force upon the ceruminous body and from in front, we should not be justified in so doing in regard to the true foreign body. Then, let us remember, the foreign bodies that find their way into the auditory meatus are those that introduce themselves there, as is the case with insects—the cockroach, the earwig, etc.—or have been forcibly pushed



in by the patients themselves, as happens with children and lunatics.

A moment's thought will convince us that it must necessarily be a very exceptional instance where the foreign body so occupies the entire meatus as not to leave some space between itself and any portion of the wall of the meatus, for the shape of the auditory canal is such that, except midway between the external opening and the drumhead, it is more oval than round, and even in this part of it is subject to much individual variation. And, besides, the cartilage of the ear is so formed as to be deficient above corresponding to the roof of the meatus: "the whole cartilage" (Quain's "Anatomy," art. "The Ear," p. 628) "may be looked upon as an elongated plate, the lower part of which is folded round in front so as to bring it *nearly* into contact with the upper part." There will, therefore, be a certain amount of deficiency, and hence we obtain a corresponding amount of space, even supposing the shape of the foreign body to be round, and the question will be how to utilise this space with the greatest advantage.

Now, in removing a foreign body, whether actually impacted or not, our object should be neither first nor last to it *in towards the drumhead*, but to at once direct our force upon it in such a way as to secure the most speedy exit possible for it from the canal.

This, it is admitted by all authorities, is fairly accomplished by our ordinary methods of syringing. But the reason why syringing is so successful an operation is, because sufficient deficiency exists between the canal-walls and the body to be removed to allow of the water getting behind the body before it becomes detached from the sides of the meatus, and in this way protect the drumhead from injury. But it is evident that the force playing upon the body from in front may,

before the water gets behind it, drive the foreign body right against the drumhead, and so cause serious injury.

The rational way, therefore of utilising any vacant space between the foreign body and the canal-wall will be to insert the nozzle of a syringe constructed so as to terminate by a very fine extremity and to possess a correspondingly minute bore. The object of this will be to enable us so to utilise the space as to syringe in such a way as will cause the water to accumulate *behind* the foreign body and *between it and the drumhead*; a welling up from behind will therefore take place, and as the water accumulates pressure will be brought to bear upon the body from within, the tendency of which will obviously be to drive it outwards. But in order to perform this delicate operation satisfactorily it is necessary that we should have in clear view the body we are seeking to



remove at each step of the operation, and this advantage we can obtain only by the employment of my spout-speculum as portrayed in the adjoining woodcut.

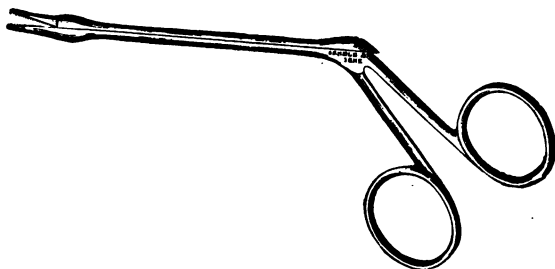
This nozzle of the syringe is so constructed that while the nozzle itself is as fine as possible, so as to occupy very little space, its extreme end is slightly bent so as to fit *over* the

foreign body, and, at the same time, steady it, and it is bored in such a way as to leave the tube of it to find an exit above and somewhat short of the tip. In this way the pipe of the syringe effects the twofold object of steadying the foreign body and shutting off any of the forward force of the syringe-stream.



COOPER'S EAR-SYRINGE.

The same object might be gained, but perhaps not quite so effectually, by having a loop of silver-wire, made like the end of an ear-scoop, attached to the syringe-pipe ; this would



steady, and, at the same time, if needed, press down the foreign body, while space would, in this way, be gained for the entrance into the meatus of the syringe-stream.

The spout-speculum and specially-constructed syringe are to be had of Messrs. Arnold and Sons, instrument-makers, Smithfield, who also manufacture for me the forceps seen in the above wood-cut, and which is by far the most available

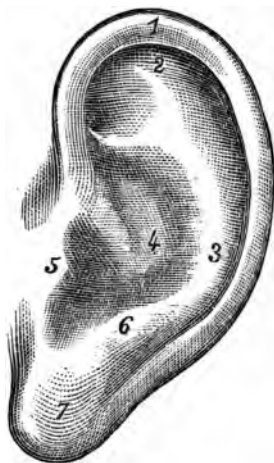
form I have ever come across for manipulation in the narrow canal of the meatus.

It only remains to be added that after a patient's ears are syringed he should be enjoined, as a protection against cold, to keep for a few hours a little olive oil on cotton wool in the ear.

## XIII.

Diseases of the External Ear : Eczema—Hæmatoma—Aural Furunculi, a Distinctive Sign of, Treatment—Pemphigus Gangrenosus—Mode of Performing the Politzer—Inflation.

THE middle ear or tympanal cavity being so much the more important part of the organ in a pathological point of view, has, in these lectures—clinical as we intended them to be—engaged our first and chief attention; and now we proceed to say a few words upon the diseases of the external ear.



THE AURICLE.

1, Helix; 2, Fossa helix; 3, Antihelix; 4, Concha; 5, Tragus; 6, Antitragus.

The external ear, covered as it is with a fine and most

delicate skin, is more than ordinarily subject to eczema, and particularly so the back part of the auricle, where it folds over upon the mastoid process. This auriculo-mastoid fold is very frequently the seat of an eczema in young children, and by some there is supposed to be a connection between this eczema and pulmonary tuberculosis, the one being said to alternate with the other; but in truth the connection is fanciful: these are in no closer pathological relationship than is one catarrhal affection with another.

Such an eczema you will succeed in curing when occurring in children by giving *Calcareo Carbonica* in the third decimal trituration, while intercurrently you administer a few doses of *Rhus Toxicodendron* in a low potency. The more scrofulous the children, the more available will this prescription prove; and along with these, especially if there be an eczema (the old *intertrigo*) of the anus or scrotum, you should order as a local application an infusion of *Calendula* mixed with one-third of Price's *Glycerine*. Should the child's motions be clayey and passed with straining, order an intercurrent dose of *Mercurius Solubilis*. There is but one kind of application for these raw surfaces that in any way equals the *Calendula*, and this is *Castor Oil*, and it certainly relieves pain by its bland and soothing properties in a most wonderful manner. In the adult this post-aural eczema proves very much more obstinate than in the child: here *Graphites* and *Arsenicum Iodidum* have to be given internally, while lotions of *Liquor Carbon. Deterg.*, with *Glycerine*, are applied locally.

Eczema, as well as erysipelas, constantly recurring, leaves the auricle thickened and swollen, and the meatus becomes partially, and sometimes even entirely, closed—a condition that proves singularly rebellious to treatment.

A bloody tumour sometimes forms upon the auricle, generally upon the antihelix, and which is remarkable in being

so often met with in lunatics, but which is found to be almost invariably produced from blows upon the ear ; the technical term for it is *Hæmatoma Auris*, and I mention it in order to direct your attention to *Hamamelis* as its remedy.

A woman with severe pains affecting the entire head, but in particular the vertex, told me that a former attack, which had lasted for some weeks, ultimately went away with an intensely inflamed condition of the auricles, followed by a most profuse watery discharge, and, after being some days under treatment, her present attack disappeared in a similar manner. The vertical headaches of the climacteric epoch of woman's life are very often associated with hyperæmia of the auricle, and sometimes of the middle ear ; *Apis* and *Lachesis* would be our remedies in these cases. When boils form upon the external ear, their most frequent site is either upon the walls of the auditory canal or in front of the tragus. Adults are sometimes liable to recurrent attacks of furunculi, and then these are remarkable for the persistent way in which they keep returning ; otherwise the affection is mostly one of childhood, and is easily cured, while it depends upon situation whether pain is present or not, it being no uncommon thing for small boils to form underneath the cutaneous lining of the meatus, which from first to last occasion no pain whatever. The less we interfere with these boils the better, but should brain-symptoms threaten, puncture may be required.

There is one sign connected with these aural furunculi, as pointed out by me in the *British Medical Journal*, June, 1878, which, though very distinctive and important in a forensic point of view, has never to my knowledge been sufficiently noticed by any writer upon ear diseases, and this is the peculiar stain left upon the pillow-case by the thickened and comparatively scanty discharge that helps to distinguish a

furunculus from an abscess. The appearance presented by a pillow in the morning after a boil in the meatus has burst is such as to enable any one to divine the nature of the affection from which the child has suffered, for the pillow-case will be studded over with stains so closely resembling small-sized buttons as to deceive the most clear-sighted at a distance. The thickened drop of discharge, falling unbroken in its descent from the canal, plops entire upon the pillow-case, on which the more liquid portion of the discharge spreads, leaving in the centre that which is inspissated; this dries, and in drying gives at a distance an almost exact image of the shank of a button, the surrounding stain rendering the appearance still more delusive.

The subjects of the affection being generally restless in their sleep, roll their heads about upon the pillow, so that by the morning it often happens that no two of the markings run together, but each one is separate, thereby making our comparison additionally striking.

These umbilicated markings, especially if there be many of them, cannot be mistaken for any disease-stain that I know of.

The treatment for boils is based upon the same principles as were laid down for abscesses, though here we gain even greater help by inquiring into and prescribing remedies in unison with the prevailing disposition to disease manifested by the patient; and the throat, nose, and teeth must be carefully examined in our search for the cause. The external ear in some instances is exquisitely sensitive to impressions of cold. In a woman I lately met with, the slightest draught of air blowing upon the ear produced—what? An ulcerated condition, not of the ear, but of the throat, so much so as to oblige her to keep her ears continually covered. Such cases point to the intimate sympathy between the ear and throat,



and establish the necessity for protecting the ear from cold where any obstinate disposition to throat affections exists. As a protective measure in these cases it generally suffices to paint the meatus, and if need be the auricle, with glycerine or some unctuous substance.

In old-standing middle-ear catarrhs we sometimes find the auditory canal so swollen as to prevent our obtaining a proper view of the membrane, and although this tumefaction of the canal may subside by treatment, it does not necessarily follow that any sequential improvement in hearing will result. At least, this accords with my own experience.

In days gone by many of the children of the Irish poor used to be carried off by Pemphigus gangrenosus (*Rupia escharotica*), or the child's evil, as it was called, the sores of which used generally to appear as large bullæ behind the ears and upon the auricles. You will see an account of it in Erasmus Wilson's work on diseases of the skin.<sup>1</sup> Dr. Whitley Stokes, who first described it, recommends as its remedy the *Scrophularia Nodosa*, our well-known figwort. Now, I have never met with this precise affection, but I have with irritating vesicles on the lips and cheeks that must have nearly resembled it, and in all of them I have found the *Scrophularia Nodosa*, used as a lotion, to prove curative. In one of these the vesicle on the lower lip, with its inflamed base, had been condemned to excision.


In the number of the *British Journal of Homæopathy* for July, 1878, p. 264, a case of "Pemphigus neonatorum," in an infant of ten days old, is taken from a German periodical, which was cured by Mossa with *Ranunculus Bulbosus* 1c. The vesicles did not begin upon the ears in Mossa's case.

And this will be a good opportunity for giving a few hints upon Politzer's method of Eustachian-tube inflation, and which

<sup>1</sup> "Diseases of the Skin." London: John Churchill. 1857.

was suggested to Professor Politzer by the anatomical observation of Toynbee that during the act of swallowing, the throat openings of the Eustachian tubes dilated, and so, becoming patulous at this particular moment, allowed of the admission of air. Taking advantage of this circumstance, Politzer proposed, by compressing an india-rubber air-bag having a pipe that fitted into the nostril, to send a jet of air along the floor of the nose while the patient was in the act of swallowing, in a way such as would secure its entrance into the Eustachian tubes. This he did by directing the patient to take a sip of water in his mouth, and then, at the moment the surgeon compressed the bag, telling him to swallow, and so obtain the muscular effort necessary for the proper opening out of the tubes.

To mention the many modifications professing authorities have proposed as improvements upon this eminently simple procedure would be amusing were they not puerile, and even nonsensical in the extreme. Better let us give you a hint or two upon its performance. In the first place procure from the instrument-maker a perfectly simple india-rubber bag, with an ivory or vulcanite pipe, upon which fits a plain piece of india-rubber tubing. Do not allow him to give you a bag that possesses a valve or any so-called improvement; the only real improvement upon this instrument being that I have myself suggested, where the tubing attached to the bag is forked at the extremity so as to fit into *both* nostrils, but is without nasal pieces as proposed by Allen and seen in accompanying illustration. This possesses all the advantages of Allen's without its increase of cost, while it admits of our passing a current of air up one or both nostrils, the former effect being secured by keeping one of the nasal pieces against the outer wing of the nose while in the act of compressing the nostrils.



Well, then, before using such a bag, direct the patient to blow his nose; this for very obvious reasons; next, tell him to take a sip of water, and then, having inserted the forked extremity of the tube into both nostrils, and having by means of your left finger and thumb compressed them sufficiently to prevent any return of air, telling him to swallow, you, with your right hand, are to grasp the bag firmly, and so eject the air along the floor of the patient's nose.

Simple and perfectly painless as is this operation, in very nervous patients it is liable to be attended with very pronounced effects. Timid girls will often faint under it; but if they do, I have no hesitation in saying that in all probability yours will be the fault. You have not gone about the opera-



ALLEN'S POLITZER-BAG.

tion sufficiently quietly. You must use much gentleness as well as firmness, and instead of employing any great force, with, at first, a gentle and gradual compression, send a stream of air along the nostril. And indeed you will find the operation much more effectual if you use the precaution to act slowly and gently; the somewhat gradual compression of the bag seems to be more effective, at any rate on performing it for the first time upon a patient, than if great force is used.

These are the chief points to observe, and possessed of

them, you are in a position to employ what has proved to be by far the most satisfactory surgical procedure ever adopted for the relief of deafness, being more generally available and much less risky than catheterisation of the tubes, and one that has elicited this high encomium from an American physician, that "if a man were to take this air-bag and travel through the country, advertising himself as an aurist, and blow up all the ears indiscriminately that were brought to him, he would be a very successful quack."

Without going quite so far as our transatlantic brother, we still must confess to this method of Politzer's proving in some cases of catarrhal deafness immediately and permanently curative, and this consorts with the testimony of all impartial observers.

When performing the Politzer inflation, remember that the entry of air into the middle ear is discovered, firstly, by the sensations of the patient, and, secondly, by the peculiar click heard by the surgeon, either by means of his ear, unaided, or else aided by Toynbee's Diagnostic Tube, or, as he termed it, Otoscope, and which is a simple piece of india-rubber tubing that passes from the ear of the patient to that of the operator, thus helping to convey the sound more directly and with greater certainty than would otherwise be possible.

In the case of young children it is not necessary to secure the concurrent act of swallowing when compressing the bag, as, with them, the tubes are sufficiently dilatable to allow of inflation at any time; so that in their case we have only to pass a piece of india-rubber tubing up the nostril, and we can then, by blowing through it from our mouths, or by using gentle compression upon a bag at the other extremity, secure the desired effect. (*Vide* foot-note, p. 141.)

## APPENDIX.

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### CASES TREATED.

It would occupy more space than we can fairly afford to enter into any sufficient explanations of the treatment adopted in the following cases. They are selected chiefly because no artificial means, such as catheterisation or air-douche (Case III., a trivial exception) were employed, sole dependence being placed upon the agency of drugs.

#### *Case I.—Neuralgia of the Tympanum.*

Mrs. Thomas, aged 49, the subject of severe *Tinea ciliaris*, which has existed all her life; otherwise healthy, no diseased teeth.

*Symptoms taken down, Thursday, 25th January, 1877.*—Last Friday was frightened by an unexpected rencontre with a policeman that agitated her excessively, and felt very much upset until the succeeding morning, when a terribly severe darting pain came quite suddenly in the left ear, shooting "right through the drum," up the side of the head, and down the lower jaw and neck along the carotid canal. She is troubled with it night and day, and it lasts for three or four hours at a time, ceasing suddenly and completely for a minute or two only, and then returning with renewed violence.

The auditory canals on both sides are short, wide, and straight, and the membranes, which can be brought well into view without a speculum, are free from vascularity.

For this frightful ear-pain she got *Pulsatilla* in the 3rd dec.; seven drops to an ounce of water, a teaspoonful at bedtime; and besides this, as her nervous system was so greatly upset, I gave her during the day *Ignatia* in doses of one-third of a drop of the tincture.

However, the *Pulsatilla* was the first medicine she took, and it gave her, to use her own expression, heavenly relief. That night she slept, for the first time since the fright, quite soundly, and except that a slight "nagging pain" remained she was perfectly well when seen the following week.

The pain in the above case was perfectly distracting, and nothing could exceed the poor woman's gratitude at having had it relieved.

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In reporting cases of deafness it is usual to mark improvement by the hearing-distance as measured by the watch; and supposing the distance at which the tick of the watch can be normally heard to be, as is the case with my own watch, thirty inches, then, in description, this will pass as the denominator, and the abnormal distance as the numerator of a fraction; so that if the patient's hearing-distance be six inches we represent it as  $\frac{6}{30}$ , this giving us a sufficiently accurate idea of the degree of deafness and of the instrument we employ to detect it.

But in truth we must not place too great a dependence upon this watch-test of hearing-distance, for in some ear cases, as, for example, in otorrhœa, as a means of registering improvement it is perfectly fallacious; as, in the first place, the parts of the middle ear that are involved may be cicatrising without there resulting any corresponding improvement in hearing; and, in the next place, the hearing power may be completely restored, and yet, in consequence of the lodgment of dried-up discharge in the meatus, an improve-

ment by this means will not be observable. Young children often deceive us regarding their being able to hear a watch; in their case we must mainly rely upon the testimony of parents. The watch—and the same holds good of other test-hearing instruments—so far from enabling us to demonstrate what progress is being made by a deaf person under treatment, is, in reality, but roughly available for the purpose, especially where eczema of the meatus or otorrhœa exists. Dependence may be placed upon the watch-test in cases where the deafness has come on gradually, or at least in cases where no external discharge exists; in other words, its use as a criterion of progress is principally confined to the proliferous inflammations of the middle ear.

But even in these, an improvement in the watch-hearing does not necessarily imply a corresponding alteration in the voice-hearing. Quite the contrary; for nothing is commoner than to find the one improve while the other remains stationary; and as the object for which patients seek treatment is to be enabled to converse readily, we must admit that the human voice is the most important standard by which to judge of improvement, although we cannot indicate the extent of the change in voice-hearing so accurately as we can any alteration in the watch-hearing. However, as some deaf persons, in their anxiety to suppose themselves improving, are often inclined to report favourably when, perhaps, no amelioration whatever has taken place, it is, for this and other reasons, more satisfactory in describing cases to give the watch-hearing distance as well as the patient's own testimony.

The upshot of the whole matter is that an observer must be very careful before he pronounces a case of deafness to be cured, the more so as a reader has to depend largely upon his simple assertion.

*Case II.—Long-standing Deafness.*

A woman aged 69, deaf for 46 years, and who has been under the treatment of several doctors, among them the notorious Dr. Turnbull, and with whom there is a history of otorrhœa in childhood, has derived great benefit from *Arsenicum Iodidum* given in the 3rd decimal trituration. The deafness improved so as to enable her to dispense with her hearing-trumpet in conversation, but the watch-hearing remained undisturbed.

*Case III.—Catarrhal Otitis with Deafness succeeding Scarlatina.*

Barnard Dyer, a boy of seven years of age, admitted to the London Homœopathic Hospital May 24th, 1877, being deaf in both ears, worse on the right side, the cause of which is traceable to scarlatina which he had two and a half years ago, and which was followed by an otorrhœa that continued for three months, since when he has been invariably deaf, though worse at some times than at others. Before scarlatina he had had very large tonsils, but these subsided in consequence, apparently, of the severe inflammation attendant upon it.

He takes cold easily, and in winter is troubled with a hollow cough; otherwise his general health is very good.

The left membrana tympani is dark and shiny, as if polished, while the right—the worst—is red and inflamed-looking along the handle and neck of the malleus.

*Treatment.*—Air-bag inflation of the tubes, once performed; and for medicine:—*Hydrastis Canadensis* 2nd dec., 7 drops to 3oz. of water, and a teaspoonful three times a day.

June 23.—Certainly better. Medicine continued; no inflation this time.

June 30.—Has gradually and decidedly improved. Watch



can be heard at all distances. Inflamed look has disappeared from the right membrane.

July 21.—Is quite well. Cold does not affect him nearly so much as it used to do, and his hearing is perfect. Discharged CURED.

The last is a most important case, and may be regarded as typical. *Hydrastis* has probably the strongest pathogenetic action upon the ear of any known drug, and has certainly, in my experience, a very strong curative action. In pathogenetic powers it may be equalled by *Quinine*; in curative properties it certainly far excels *Quinine*.

With diluted *Glycerine*, *Hydrastis* forms a lotion incomparably superior to any other in the treatment of old-standing otorrhœa. *Hydrastis* in this respect is approached only by *Calendula*, to which it is superior by reason of its specificity.

I am, I believe, the first to recommend *Hydrastis* as remedial against deafness, although for noises in the ears it is a well-proved remedy.

*Case IV.—Noises in the Ears, with Deafness.*—Mrs. J., æt. 45, a lady whom care and anxiety had done a good deal to upset, complained to me of deafness which she had had for two years at every menstrual period, and a constant singing in the ears night and day, and which is rather worse in the morning on getting out of bed. Then she has neuralgic pains on both sides of the forehead, which cause a dragging and drawing up of the eyelids, with a heavy and debilitated feeling in the head.

The catamenia are regular, although attended with aggravation of the deafness.

Bowels are regular, urine is clear.

Watch heard well on the right side, only on contact on

the left; the membranes have a slight coating of cerumen upon them obscuring the view.

*Hydrastis Canad.*, gtt. vij.—ziii.      *Misce.*

zj. ter in die.

After a week of treatment report testifies to improvement, but there is still a confused and inactive feeling about the head, and some singing noises; she feels, however, stronger, and the deafness seems better.

After a month's treatment she writes from the country that the deafness, noises, and headache had left, and I had an opportunity of hearing some twelve months afterwards of the perfect success of the treatment, albeit that once or twice during this period the confused headachy feeling reappeared, to be at once put a stop to by the medicine.

I would impress upon the reader that in this case the important symptom indicative of *Hydrastis* was the heavy, dull condition of the head, accompanied by noises in the ears, while the symptom drawing up of the eyelids may possibly have been owing to a certain irritation of the third nerve. There was not, I may mention, any giddiness complained of.

*Case V.—Deafness and Enlarged Tonsils.*

Selina White, a girl of fourteen, a servant, has had deafness for two or three months, which came gradually from cold, and three nights ago was much troubled with earache upon the left side. Admitted to my ear dispensary at the London Homœopathic Hospital, 19th January, 1878.

Both tonsils are greatly enlarged, right malleus-handle congested, left membrane gives one the idea of there having been much ulceration in the middle ear, and there now is a minute perforation. General health good; hears watch feebly on contact.

*Calcareo Phosph.* 2x, 15 grains to 6 oz. of water ; a drachm three times a day.

Feb. 2.—Hears much better ; voice is very thick. Watch-hearing, easily on contact. Right membrane less congested ; left meatus filled with secretion.

Continue.

Feb. 9.—Voice still thick, hearing better. Watch-hearing, right,  $\frac{3}{10}$ , left  $\frac{2}{30}$ .

Continue.

March 2.—Hearing perfect for voice. Watch-hearing, right  $\frac{3}{10}$ , left  $\frac{1}{10}$ . Tonsils are smaller, but still large. The perforation in the left drumhead has closed up.

The *Calcareo Phosphorica*, as pointed out for the first time by myself in the *Monthly Homœopathic Review*, September, 1867, very seldom fails to reduce the size of enlarged tonsils ; nor would it have done so in this case had the patient remained under treatment. Unfortunately, however, all she cared about was her hearing, and when this got well she decamped.

As is frequent with the deafness of enlarged tonsils, there was an insidious ulceration—we had almost better say catarrhal disintegration—going on in the left middle ear, of which the patient was unaware, and which, it often happens, can only be detected by a close examination of the state of the membrana tympani. Where the discharge is sufficiently copious to attract the sufferer's attention it will generally be found to be clearer than the discharge of ordinary purulent otorrhœa. Perforations existing with enlarged tonsils are generally small, they easily heal, and thus we often find the membranes in these cases studded with markings.

#### *Case VI.—Otorrhœa with Deafness.*

Miss R., aged 21, a florid, dark-haired girl, was cured in about a month of otorrhœa of the left ear, with deaf-

ness, which had existed since she was fifteen months old, consequent upon scarlet fever. The discharge was thick and yellowish. The only treatment pursued in this case was the application of *Glycerine* to both auditory canals, as the ears were extremely sensitive to cold, which always increased the discharge, and the exhibition of *Hepar Sulph.* in 3rd dec. trit., five grains dry on the tongue, night and morning.

The case was treated by me some years ago, and before I paid special attention to these diseases. I refer to it chiefly to point to *Hepar Sulph.* as a valuable remedial agent, and strictly homœopathic to otorrhœa.

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